

MISCELLANEOUS SPECIES OF *MASDEVALLIA* (ORCHIDACEAE)
FROM ECUADOR, PERU AND BOLIVIA

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Masdevallia albicans Luer, sp. nov.

Species haec *M. simulatricis* Krzl. affinis sed foliis angustissimis, pedunculo quam foliis semilongo, sepalis lateralibus erosis longicaudatis et lamina labelli anguste elliptica notabilis.

Plant small, epiphytic, caespitose; roots thick, flexuous. Secondary stems abbreviated, 6-10 mm long, with 2-3 close, tubular sheaths, unifoliate. Leaf erect, coriaceous, narrowly linear, minutely tridenticulate at the subacute apex, 3-6 cm long, 2-3 mm wide. Inflorescence a single, long-pedicellate white flower with pale yellow tails; peduncle about 5 mm long, from low on a secondary stem; floral bract thin, closely sheathing, 7 mm long; pedicel cellular-glanular, 10-15 mm long; ovary minutely glandular, 1.5-2 mm long; dorsal sepal connate to the lateral sepals for 1.5-2 mm, elliptical, concave, the 3 veins prominent externally, the apex acuminate into a thick tail 6 mm long, total length 13 mm, 5.5 mm wide; lateral sepals ovate, oblique, the margins erose, the apices acuminate into tails similar to the dorsal sepal, connate at the base above transverse carinae, each 12 mm long, 3 mm wide; petals translucent pale green, oblong-subrhombic, the apex slightly dilated, obscurely obtusely 3-lobed, 1.5 mm long, 1.25 mm wide; lip white, the blade elliptical with the apex rounded, with a pair of acute, erect lobules at the rear near the claw, the disc with a short, rounded pair of lamellae below the middle, the base unguiculate, with minute basal auricles, the claw 1.25 mm long, total length 2.75 mm, 1 mm wide; column with short, broad wings, denticulate at the apex, 2 mm long, with a foot nearly as long.

ETYMOLOGY: From the Latin *albicans*, "becoming white, or whitish," in reference to the whitish flowers.

TYPE: *ECUADOR*: AZUAY: western slopes of the Andes, alt. 2000 m, 1972, B. Malo s.n., cultivated in Cuenca, flowered in cult. 16 July 1977, C. Luer 1715 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This species is closely related to *M. simulatrix*, but the former may be distinguished by the very narrow, linear leaves and inflorescences no more than half the length of the leaves. Like *M. simulatrix*, the flowers become nearly black when dry. The lateral sepals are minutely erose along the margins. The petals are obscurely three-lobed at the apex. The narrowly elliptical blade of the long-clawed lip is bicarinate.

Masdevallia amaluzae Luer & Malo, sp. nov.

Planta parvula epiphytica caespitosa, caulibus secundariis brevibus, foliis coriaceis ellipticis petiolatis, pedunculo gracili tereti plus minusve horizontali, racemo paucifloro, flore parvo solitario successivo ochraceo brunneo

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vittato, tubo sepalorum brevi caudis filiformibus, sepalis lateralibus in laminam plus minusve planam bifurcatam connatis, petalis subfalcatis acutis, labello anguste ligulato subacuto base crasso marginibus basalibus elevatis rotundatis.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 8-10 mm long, lightly channeled, enclosed by a thin, loose, white sheath, unifoliate. Leaf erect, coriaceous, elliptical, petiolate, 3.5-5.5 cm long including the petiole, 9-11 mm wide, acute to subacute at the apex, tridenticulate, the base cuneate into the channeled petiole 1-2 cm long. Inflorescence a few-flowered (1-3) contracted raceme of successive flowers borne by an ascending or reclining to horizontal, slender peduncle 4-5 cm long, with a bract below the middle, from a node low on the secondary stem; floral bract tubular, 4 mm long; pedicel 6 mm long; ovary 3-4 mm long, with low, irregular carinae; sepals yellowish with brown veins, the veins more or less prominent externally, the dorsal sepal obovate, connate to the lateral sepals for 5 mm into a short, cylindrical tube, the free portion narrowly triangular, 3-veined, acuminate into a slender, terete tail, the total length 30-35 mm, width 5 mm, the lateral sepals connate 12 mm into an oblong, bifurcated, 6-veined lamina, cellular-glandular, the free portions triangular, the acute apices acuminate into slender tails similar to that of the dorsal sepal, the total length 30-37 mm, 7-8 mm broad together; petals translucent white with a purple midvein, subfalcate, 3.5 mm long, 1 mm wide, the apex acute, the base oblique and unguiculate below a swollen, broadly obtuse angle below the middle of the labellar margin; lip white with 3 red veins down the center, oblong-ligulate, 5 mm long, 1.25 mm wide, subacute at the apex, the base thickened, rounded, retuse, with elevated, rounded margins, hinged beneath, the disc with a low, longitudinal pair of slightly irregular calli; column green, stout, 3 mm long, with a curved foot 2 mm long.

ETYMOLOGY: Named for the region of Amaluza in the Province of Azuay, Ecuador, where the species was discovered.

TYPE: *ECUADOR*: AZUAY: epiphytic near Amaluza, alt. 2000 m, May 1973, B. Malo 51, cultivated near Cuenca, flowered in cult. 8 July 1977, C. Luer 1655 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This delicate, little species may be recognized by the slender, yellowish flowers prominently striped in brown with thin tails, borne successively by a slender, more or less horizontal peduncle. The sepals are connate into a short tube, the lateral sepals connate twice longer into a more or less flat, bifid lamina. The petals are subfalcate and acute, and the ligulate lip is narrow with three red stripes.

Masdevallia andreetae Luer, sp. nov.

Habitu *M. chimaerae* Rchb. f. et affinibus similis, sed floribus differt. Sepala flavescentia atropurpureo maculata intus papillosa extus glabra undulata caudis filiformibus, sepalum dorsale transverse cordatum, synsepalum gibbosum, petala linearia curvata apice claviformia verrucosa base dilatata lamellata serrata papillosa, hypochilium labelli concavum, epichilium multijugis transverse ovatum valde convexum rugosum.

Plant medium to large, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, channeled, 3-4.5 cm long, clothed by 2-3 loose, dry sheaths, unifoliate. Leaf erect, coriaceous, narrowly elliptical, tridenticulate at the subacute apex, gradually narrowed and conduplicate below the middle, subpetiolate, 17-25 cm long, 2.5-3.5 cm wide. Inflorescence a few-flowered (3-4) raceme of successive, widely spread, horizontally dependent flowers, produced on a descending peduncle, 15-20 cm long, green, flecked with white, from low on the secondary stem; floral bract 1-2 cm long; pedicel olive-green, 2 cm long; ovary purple, subverrucose, 11-12 mm long, 7 mm broad; sepals yellowish, heavily spotted with dark purple, minutely papillose within, glabrous without, the dorsal sepal transversely cordate, united to the lateral sepals for 5 mm, the free margins undulate, the apex attenuated into a filiform tail 5 cm long, total length 70 mm, width 22 mm, the lateral sepals ovate, oblique, united for 15 mm to form a narrow mentum, the apices produced into tails similar to the dorsal sepal, total length 75 mm, 33 mm wide together; petals white spotted with purple, cartilaginous, linear, curved, the apex clavellate, rounded, convex, tuberculose, with more or less serrate margins, dilated toward the base, the inner surface with a serrate plate and papillose along the labellar margin, 11 mm long, 3 mm wide; lip acutely deflexed at the junction of the hypochile with the epichile, the hypochile concave, yellow, about 5 mm long, 5 mm wide, loosely hinged to the column-foot, the epichile white, suffused with rose, transversely ovate, obtuse, strongly convex, deeply rugose, 12 mm wide, 7 mm long unspread; column pale yellow, spotted with purple, stout, 4 mm long, 2.5 mm wide, with an equally long foot.

ETYMOLOGY: Named in honor of Padre Angel Andreetta of Cuenca, Ecuador, who discovered this species.

TYPE: *ECUADOR*: CARCHI: western declivity of the Andes, alt. 1500-2000 m, Oct. 1975, A. Andreetta & A. Hirtz 1, cultivated at Cuenca, flowered in cult. 12 July 1977, *C. Luer 1687* (HOLOTYPE: SEL).

DISTRIBUTION: Northern Ecuador.

Vegetatively this distinct species is similar to the numerous species closely related to *Masdevallia chimaera* Rchb. f. The large flower is similarly borne on a descending peduncle to face downwards with the outstretched sepals with tails paralleling the horizon. The clubbed petals protrude conspicuously from the center of the flower like the pair of stalked eyes of a snail. The dangling lip presenting its convex, furrowed surface below, resembles very much the gills of a mushroom.

Masdevallia anemone Luer, sp. nov.

Species haec *M. ventriculariae* Rchb. f. et affinitatibus similis, sed flore aurantiaco, caudis sepalorum brevibus reflexis, partibus libris sepalorum rotundatis recurvatis intus pilis densis brevibus capitatis obtectis, partibus inclusis glabris, petalis panduratis et labello oblongo obtuso marginibus supra medium deflexis distinguitur.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems blackish, 1-1.5 cm long, with a short, close, tubular sheath, unifoliate. Leaf erect, thinly coriaceous, elliptical, 7-9.5 cm long including an indistinct,

1.5-3 cm long petiole, 17-21 mm wide, the apex subacute, tridenticulate, carinate dorsally along the midvein, the base gradually narrowed to the petiole. Inflorescence a solitary, more or less horizontal, orange, tubular flower borne by a suberect, slender peduncle ca. 2.5 cm long, with a bract near the base, from a node near the base of the secondary stem; floral bract tubular, 6 mm long; pedicel 10 mm long; ovary 4 mm long; sepals glabrous externally, yellow-orange above the middle, orange below the middle with bright orange veins, connate 13-15 mm into a cylindrical, slightly ventricose, sepaline tube, glabrous within, the free portions rounded and beset with close, short, capitate hairs, abruptly produced into sharply recurved, orange tails 15 mm long, the dorsal sepal obovate-oblong, 20 mm long, 9 mm wide, the lateral sepals 18 mm long, the free portions 6 mm wide; petals orange, oblong-panduriform, 6 mm long, 3 mm wide, the apex obtuse, obscurely lobed, with a thick lamella along the lower margin ending on a rounded, dilated portion at the base; lip oblong, 4.5 mm long, 1.75 mm wide, the cordate base white, hinged beneath, suffused with purple near the middle, the margins deflexed above the middle, the apex orange, narrowly obtuse; column greenish white, edged in purple, semiterete, 4.5 mm long, with a foot 3 mm long.

ETIMOLOGY: Named for the resemblance of the flower to a sea anemone, a colorful marine polyp with a hollow, cylindrical body closed below and with a mouth above surrounded by tentacles and stinging cells, named for the fancied resemblance to the "windflowers" of the genus *Anemone*. From the Greek *anemone*, "daughter of the wind."

TYPE: *ECUADOR*: MORONA-SANTIAGO: epiphytic near Bomboiza, alt. ca. 1000 m, ca. 1968, Padre Angel Andreetta s.n., cultivated by B. Malo near Cuenca, flowered in cult. 5 Feb. 1978, *C. Luer 2458* (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

Vegetatively this species is not distinctive from its allies. The little horizontal flowers are borne on relatively short peduncles, the orange sepals form a well-developed sepaline tube, and the short, rounded, free parts recurve with acutely reflexed tails like the tentacles of a colorful sea anemone. To complete the illusion the exposed, inner surfaces of the sepals are studded with short, capitate hairs resembling the many, crowded, suction feet of a starfish, still another lowly sea animal.

Masdevallia aurea Luer, sp. nov.

Habitu *M. ventriculariae* Rchb. f. et affinis similis, sed flore solitario vivido aureo pro planta grandi, pedunculo brevi, tubo sepalorum longo arcuato compresso supra mentum constricto, parte libera sepali dorsalis transverse ovata, partibus libris sepalorum lateralium longioribus ovatis, caudis reflexis filiformibus, petalis oblongis apice dilatatis bilobatis callo longitudinali base lobo obtuso et labello oblongo supra medium dilatato marginibus revolutis sinuatis differt.

Plant small to medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems terete, short, 1-1.5 cm long, clothed by 1-2 loose, ribbed, tubular sheaths, unifoliate. Leaf erect, coriaceous, narrowly elliptical, the apex subacute, tridenticulate, the base cuneate into a channeled pe-

tiolate 1.5-3.5 cm long, total length 6-11.5 cm, 18-21 mm wide. Inflorescence a proportionately large, single, bright orange flower borne at the apex of a terete peduncle 2.5-3 cm long, from low on the secondary stem; floral bract 6 mm long; pedicel 7 mm long; ovary 4-5 mm long; dorsal sepal oblong, 24 mm long, 10 mm wide, united for 18 mm to the synsepal to form a long, somewhat arcuate, compressed tube, constricted near the middle, the free portion transversely ovate, abruptly contracted into a bright orange, recurved, filiform tail 25-27 mm long; lateral sepals protruding beyond the dorsal sepal, connate for 25 mm, forming a mentum below the narrowed middle portion of the sepaline tube, 28 mm long, 15 mm wide, the free portions ovate, the apices produced into recurved tails similar to that of the dorsal sepal; petals yellow, oblong, dilated at the rounded, bilobed apex, with a longitudinal callus above the labellar margin from near the apex to the end of an obtuse, basal lobe, 7 mm long, 2.5 mm wide; lip pale yellow, oblong-subpandurate, the margins revolute and sinuate above the middle, the apex narrowly rounded, the base truncate, hinged below, the disc 3-veined, 5.5 mm long, 2 mm wide; column pale yellow, edged below in purple, semiterete, 4 mm long, with a foot 2 mm long with an incurved extension.

ETYMOLOGY: From the Latin *aureus*, "golden, orange," in reference to the color of the flowers.

TYPE: *ECUADOR*: MORONA-SANTIAGO: eastern slopes of the Andes, alt. 1700 m, Dec. 1974, B. Malo s.n., cultivated near Cuenca, flowered in cult. 15 July 1977, C. Luer 1702 (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

This rare species, apparently allied to the section *Tubulosae*, may be distinguished by its single, relatively large, bright orange flower borne by a relatively short peduncle. The sepaline tube is curved and constricted near the middle, the free portions of the lateral sepals protrude beyond the dorsal sepal, and the equally bright orange filiform tails are recurved.

Masdevallia ayabacana Luer, sp. nov.

Planta mediocris ad grandis caespitosa, caulibus secundariis crassis abbreviatis unifoliatis, foliis tenuibus coriaceis anguste obovatis obtusis sensim petiolatis, pedunculo tereti longo declinato, racemo contracto paucifloro, floribus successivis carnosus purpureis intus glandulo-papillosis caudis gracilibus virescentibus sepalis longioribus, cupula sepalorum profunde gibbosa, petalis crassissimis subquadratis truncatis subtridentatis purpureo-punctatis, labello carnoso oblongo-elliptico apice obtuso verrucoso purpureo-punctato.

Plant medium to large, presumably epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, to about 2 cm long, with 2-3 thin, tubular sheaths, unifoliate. Leaf erect, thin, coriaceous, dull green, narrowly obovate, 10-23 cm long, 26-33 mm wide, obtuse, gradually narrowed into a channeled petiole. Inflorescence a contracted, few-flowered (3-5) raceme of successive flowers, the peduncle terete, purplish, prostrate to declining, 25-34 cm long, from a node low on the secondary stem; floral bract thin, oblique, 1.5 cm long; pedicel thick, about 1 cm long; ovary about 11 mm long; sepals fleshy, red-purple with slender, yellow to green tails 5-6 cm long, glandular-papular within, the dorsal sepal subtriangular, united to the lateral

sepals for 8-9 mm, total length 75 mm, 15 mm wide, the lateral sepals ovate, oblique, connate for about 17 mm into a concave, gibbous synsepal, forming with the dorsal sepal a deep sepaline cup, total length 76 mm, 34 mm wide together; petals very thick, cream with purple spots, subquadrate, 5 mm long, 3 mm wide; contracted toward the base, truncate and bluntly subtridentate at the apex, slightly grooved centrally; lip thick, orange spotted with purple, oblong-elliptical, 7 mm long, 3 mm wide, shallowly channeled, verrucose at the obtuse apex with a thick tuberosity beneath, the base retuse, hinged beneath; column stout, 4 mm long, with a short foot.

ETYMOLOGY: Named for the region where the species was discovered.

TYPE: PERU: PIURA: near Ayabaca, R. Stumpfle s.n., cultivated by J & L Orchids, at Easton, Ct., and T. Vigliotti, Ft. Lauderdale, Fla., flowered in cult. 28 Aug. 1976, *C. Luer* 2269 (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

This distinctive species is remarkable in the long, declining, terete peduncle with successive flowers. The large, long-tailed, fleshy flowers are papular-pubescent within; the thick, unguiculate, rectangular petals are truncate and broadly tridentate; the obtuse apex of the thick, oblong lip is verrucose.

Masdevallia brenneri Luer, sp. nov.

Masdevalliae guttulatae Rchb. f. similis sed sepalis glabris, sepalo dorsali crasso horizontali, cupula sepalorum synsepaloque applanatis et apicibus sepalorum lateralium crassissimis ecaudatis notabilis.

Plant medium in size, epiphytic, densely caespitose; roots slender, flexuous. Secondary stems abbreviated, 1-2 cm long, with 2-3 short, thin sheaths, unifoliate. Leaf erect, coriaceous, narrowly obovate to elliptical, subacute, tridenticulate, gradually narrowed toward the subpetiolate base, 7-11 cm long, 10-13 mm wide. Inflorescence a contracted, several-flowered (4-8) raceme of successive, light green, fleshy flowers borne by an erect, triquetrous peduncle, 6-13 cm long, from near the base of a secondary stem; floral bracts imbricating, 8-10 mm long; pedicel 10-12 mm long; ovary 3 mm long; dorsal sepal horizontal, rhombic, united to the lateral sepals for 3 mm, the apex produced into a 9 mm long, 2 mm thick tail, total length 16 mm, width 5 mm; lateral sepals light green dotted with rose centrally, united for 9 mm into a horizontally flattened, subquadrate, shallowly gibbous, bifid lamina, the free apices thick, triangular, 7 mm long, total length 14.5 mm, 11 mm wide together; petals fleshy, white, dotted and suffused with rose, oblong, obscurely bidentate at the truncate apex, with a longitudinal callus above the labellar margin and produced into a rounded swelling near the base, 5 mm long, 1.5 mm wide; lip white with purple dots, oblong, obtuse, with a low pair of folds near the middle, 4 mm long, 1.75 mm wide; column terete, 4 mm long, the foot short, spotted with purple, with a very short, incurved extension.

ETYMOLOGY: Named in honor of Joe Brenner of Puyo, Ecuador, who discovered the species.

TYPE: *ECUADOR*: PASTAZA: epiphytic in cloud forest near Mera, alt. 1000 m, J. & L. Kuhn & J. Brenner s.n., cultivated at Easton, Ct., flowered in cult., 18 May 1977, *C. Luer 1640* (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

Although distinct among the winged-peduncle species (section *Alaticaulis*), this species superficially resembles *Masdevallia guttulata* Rchb. f. The flower of *M. brenneri* is easily recognized by the pale green, glabrous flowers, a broad, transversely flattened sepaline cup, rosy within, with the thick, horizontal tail of the dorsal sepal overlying the broad, protruding synsepal. The lateral sepals end in thick, subacute angles. The petals and lip of the two species are very similar.

Masdevallia carmenensis Luer & Malo, sp. nov.

Species haec *M. amaluzae* Luer & Malo affinis, sed flore grandiore albivirescenti purpureo vittato, tubo sepalorum longicylindrico cum mento brevi, synsepalo concavo, petalis oblongis acuminatis cum callo basali rotundato, labello oblongo-obovato obtuso arcuato marginibus basalibus rotundatis erectis, pede columnae longiore notabilis.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, 10-15 mm long, unifoliate, enclosed by a short, close, tubular sheath. Leaf erect, coriaceous, elliptical, petiolate, 5-8 cm long including the 1-2.5 cm long petiole, 14-17 mm wide, the acute apex tridenticulate, the base cuneate into the channeled petiole. Inflorescence a few-flowered (2-3?), short raceme of successive flowers borne by a slender, more or less horizontal peduncle 5-6 cm long, with a bract below the middle, from a node low on the secondary stem; floral bract tubular, 5 mm long; pedicel 7 mm long; ovary green, 3 mm long, 6-ribbed; sepals greenish white, prominently striped in deep purple, with zones of purple suffusion between the stripes, subcarinate along the veins externally, the dorsal sepal obovate, connate to the lateral sepals for 12 mm into a well-developed, cylindrical tube, the free portion narrowly triangular, microscopically erose, 3-veined, acuminate into a slender, white tail, the total length 48 mm, 6 mm wide, the lateral sepals connate 20 mm into an oblong, concave synsepal, forming at the base a small mentum with the column-foot, 6-veined, cellular-glandular within, the free portions triangular, the acute apices acuminate into slender tails similar to that of the dorsal sepals, the total length 51 mm, 17 mm wide together; petals white marked with red-purple, oblong, 6 mm long, 1.75 mm wide, the apex acuminate, acute, with a rounded callus at the base of the labellar margin; lip white, oblong-obovate, 8 mm long, 4.25 mm wide, arcuate, the apex obtuse, the base thickened, truncate, with erect, rounded margins, hinged beneath, the disc with a converging pair of low lamellae; column stout, greenish white marked with purple, 4 mm long, with a thick foot 6 mm long, with an incurved extension.

ETYMOLOGY: Named for the area of "Carmen," where the species was found.

TYPE: *ECUADOR*: MORONA-SANTIAGO: epiphytic in cloud forest on the eastern slopes of the Andes near Carmen, alt. 2200 m, April 1975, B. Malo s.n., cultivated near Cuenca, flowered in cult. 4 Feb. 1978, *C. Luer 2455* (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

This small species is allied to *Masdevallia amaluzae* Luer & Malo and *M. patula* Luer & Malo. *Masdevallia carmenensis* may be distinguished by the whitish flowers veined in deep purple with greenish white tails. The sepals are connate into a well-developed sepaline tube. The concave synsepal forms a short mentum at the base with a long column-foot. The narrowly oblong petals are pointed with a rounded callus at the base, and the arcuate, oblong lip is widest above the middle.

Masdevallia chaetostoma Luer, sp. nov.

Habitu *M. polystictae* Rchb. f. et affinibus similis, sed planta parvula, racemo erecto subsecundo laxae paucifloro, floribus albis, tubulo sepalorum arcuato cylindrico stomate villosa caulis filiformibus divergentibus, petalis anguste oblongis apice denticulatis, et labello purpureo elliptico bilamellato differt.

Plant small, epiphytic to terrestrial, caespitose; roots slender, flexuous. Secondary stems slender, short, 6-10 mm long, enclosed by a loose, ribbed, tubular sheath, unifoliate. Leaf erect, coriaceous, obovate, tridenticulate at the obtuse to subacute apex, the base gradually cuneate into a grooved petiole, 1-1.5 cm long, total length 2.5-4 cm, 7-11 mm wide. Inflorescence an erect, loosely few-flowered (4-7), subsecund raceme, 9-13 cm tall including the peduncle, the peduncle filiform, from low on the secondary stem; floral bract loose, oblique, 3 mm long; pedicel 1 mm long; ovary 1 mm long, with undulate wings; sepals white, connate into a curved, cylindrical tube, glabrous without, villous within near the opening, with filiform, diverging, greenish to orange tails 11-12 mm long, the dorsal sepal united to the lateral sepals for 5 mm, oblong, concave, 7 mm long, 3 mm wide, the free portion broadly triangular, the obtuse apex tapered into the tail, the lateral sepals connate for 3.5 mm, forming a mentum at the base with the column-foot, obovate, oblique, acuminate into tails similar to that of the dorsal sepal, the lamina 6 mm long, 4 mm wide spread out; petals translucent white, narrowly oblong, irregularly denticulate at the truncate apex, slightly dilated along the labellar margin near the base, 2 mm long, 0.3 mm wide; lip red-purple, elliptical, the rounded sides curved up, the apex broadly rounded, minutely irregular, deflexed, the base rounded, retuse, hinged beneath, the disc with a pair of transverse, rounded lamellae, 2.75 mm long, 1.5 mm wide; column semi-terete, greenish white, 2 mm long, with a curved foot 1 mm long.

ETYMOLOGY: From the Greek *chaete*, "long hair," and *stoma*, "mouth, opening," in reference to the long hairs within the opening of the sepaline tube.

TYPE: ECUADOR: PICHINCHA: along the old road between Quito and Santo Domingo, above Chiriboga, alt. 2500 m, Dec. 1973, B. Malo s.n., cultivated in Cuenca, flowered in cult. 15 July 1977, C. Luer 1709 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

ADDITIONAL MATERIAL EXAMINED: ECUADOR: PICHINCHA: terrestrial on the road embankment near km 30 of the old road between Quito and Santo Domingo, above Chiriboga, alt. ca. 3000 m, 29 July 1977, C. Luer & J. Luer 1776 (SEL).

This little, frail member of the section *Polystictae* may be recognized by the small leaves and the thrice longer, filiform peduncle. The opening of the white, tubular flowers is beset with long, white hairs, and the sepaline tube terminates in widely spreading capillary tails that are as long as or longer than the tube itself.

Masdevallia colossus Luer, sp. nov.

Species haec *M. leontoglossae* Rchb. f. et affinis cognata, sed pedunculo pedicelloque elongato, flore grandi caudis sepalorum longissimis et labello magno crasso verrucosissimoque distinguitur.

Plant medium-sized to large, presumably epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, channeled, 4-6 cm long, enclosed by 2-3 loose, tubular sheaths, unifoliate. Leaf erect, thickly coriaceous, narrowly obovate, 12-18 cm long including the petiole, 3-4 cm wide, the apex obtuse to rounded, tridenticulate, the base gradually narrowed into a channeled petiole 1-2 cm long. Inflorescence a single-flowered, erect peduncle 10-11 cm long, from a node on the secondary stem; floral bract tubular, 25-28 mm long; pedicel spotted with purple dorsally, 6 cm long, 4 mm thick; ovary stout, spotted with purple, 11-12 mm long; flowers large, fleshy, with a disagreeable odor; sepals green, minutely spotted with purple, shortly pubescent within above the middle, the dorsal sepal ovate, connate to the lateral sepals for 12 mm into a short, broad, cylindrical cup, the free portion triangular, acuminate into a thick, narrow tail, total length 9 cm, width 16 mm, the lateral sepals obliquely ovate, connate to the column-foot for 16 mm and to each other for 9 mm to form a prominent, deep, obtuse mentum, studded with purple verrucae below the middle and white hairs above, the apices acuminate into similar semiterete tails, total length 8 cm, width 15 mm; petals white with a purple midvein, oblong, 12 mm long, 3.25 mm wide, acute at the apex, slightly dilated and thickened along the labellar margin above the middle; lip greenish white, suffused and dotted with purple, very thick, oblong, 18 mm long, 7 mm wide, the apex obtuse, verrucose, the disc with a longitudinal pair of verrucose calli ending near the apex, the base truncate-retuse, with obscure nectiferous angles, hinged below; column stout, greenish white edged in purple, 11 mm long, with an equally long, spotted foot with a short, incurved extension.

ETYMOLOGY: From the Latin *colossus*, "a gigantic statue of antiquity," in allusion to the huge size of the flower.

TYPE: PERU: AMAZONAS: collected near Molinopampa, purchased and cultivated by Don Richardson, Long Island, New York, flowered in cult., 24 Nov. 1977, C. Luer 2239 (HOLOTYPE: SEL).

DISTRIBUTION: Northern Peru.

This species is closely related to the large number of species similar to *Masdevallia leontoglossa* Rchb. f., but it is readily distinguished by the huge, solitary flower borne by a long peduncle and a long pedicel. The long-tailed dorsal sepal reaches 9 cm in length and the long tails of the lateral sepals trail downward. Excluding the fleshy, short-cylindrical sepaline cup, the span of the flower reaches 15-16 cm. The petals and the lip are typical of the section, but the immense lip is very thick and markedly verrucose at the apex.

Masdevallia delphina Luer, sp. nov.

Habitu *M. melanopus* Rchb. f. et affinis similis, sed racemo gracili sparsifloro, floribus parvis, sepalis purpureo punctatis in tubulum sepalorum subglobosum connatis, caudis brevibus crassissimis, petalis oblongis tridentatis et labello subpandurato apice rotundato undulato eroso prope medium biplicato dignoscenda.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, 1-1.5 cm long, enclosed by 2-3 thin, tubular sheaths, unifoliate. Leaf erect, coriaceous, narrowly elliptical, tridenticulate at the subacute apex, the base cuneate into a channeled petiole 1.5-2.5 cm long, total length 3-6.5 cm long, 8-12 mm wide. Inflorescence a slender, erect, distantly several-flowered (6-8), subsecund raceme to 20 cm tall including the peduncle, the peduncle slender, from a node on the secondary stem; floral bract thin, tubular, 3-4 mm long; pedicel 5-6 mm long; ovary 2 mm long; flowers suffused and dotted with purple on lavender, with short, very thick tails, yellow on the inner surface, purplish on the outer surface; dorsal sepal united for 4 mm with the lateral sepals to form a subglobose, fleshy, sepaline tube, obovate, concave, minutely pubescent above the middle within, the apex rounded, with a 2 mm long, 1 mm thick, blunt tail, total length 7 mm, width 3 mm unspread; lateral sepals connate for 2.5 mm at the base to form a suborbicular lamina with a rounded mentum near the middle, the apices produced into tails similar to those of the dorsal sepal, total length 6 mm, 3.5 mm wide together unspread; petals white with a few purple spots, oblong, slightly dilated at the tridentate apex, with a longitudinal callus above the labellar margin, 2.25 mm long, 0.6 mm wide; lip white marked with purple, oblong-subpanduriform, the apex rounded, undulate, minutely erose, with erect sides below the middle, ending in rounded folds above the middle, retuse at the base, 2.5 mm long, 1.1 mm wide; column greenish white, 2 mm long, with a foot 1.5 mm long.

ETYMOLOGY: From the Latin *delphinus* (Greek *delphos*), "a dolphin or porpoise," in allusion to the resemblance of flower to the head of a dolphin.

TYPE: ECUADOR: LOJA: western slopes of the Cordillera, alt. 2000 m, Dec. 1974, B. Malo s.n., cultivated near Cuenca, flowered in cult. 16 July 1977, C. Luer 1716 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

The sepals of *Masdevallia delphina* are united for over half their length into thick, little, tubular flowers with an angled mentum and short, fleshy, rounded tails. Each flower resembles the head and nose of a minute, bottle-nosed dolphin. The petals are three-toothed at the apex. The lip is rounded and erose at the apex and provided with a pair of rounded folds near the middle.

Masdevallia deltoidea Luer, sp. nov.

Haec species *M. velutinae* Rchb. f. affinis, sed statura minore, pedunculo unifloro, ovario cristato, flore plus minusve complanato subtriangulari ochroleuco dense pubescenti brevicaudato, petalis apice papillosis et labello spatulato epichilio transverse elliptico plurilamellato distinguatur.

Plant small to medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems channeled, 3-5.5 cm long, enclosed by a loose, tubular sheath and another 1-2 at the base, unifoliate. Leaf erect, thinly coriaceous, narrowly obovate to narrowly elliptical, 12-17 cm long, 2-2.5 cm wide, carinate on the back, subacute to obtuse at the apex, narrowed gradually to the subpetiolate base. Inflorescence single-flowered, on a descending peduncle 8-10 cm long, with 5-8 bracts, from a node on the secondary stem; floral bract thin, 8-9 mm long; pedicel purple, 10 mm long; ovary red-purple, 4 mm long, 3 mm wide, with 6 fringed crests; sepals widely spread, more or less flat, glabrous externally, copiously pubescent within, light orange-brown to nearly white, the acute apices acuminate into orange-brown, filiform tails 6-15 mm long, the dorsal sepal triangular, united to the lateral sepals for 3 mm, 10-12 mm long, 8-11 mm wide, the lateral sepals ovate-triangular, connate for 8-9 mm, forming a shallow mentum below the column-foot, 10-12 mm long, 10-12 mm wide; petals oblong, slightly dilated near the middle, 3.5 mm long, 2 mm wide, yellow with light brown spots, the subacute apex papillose, obscurely bivalved; lip fleshy, spatulate, orange-brown, 5 mm long, 2.75 mm wide, the hypochile 3 mm long, 2.25 mm wide, deflexed, with rounded, erect, lateral margins, cleft centrally, the base concave and hinged to the column-foot, the epichilum transversely elliptical, 2 mm long, 2.75 mm wide, very shallowly concave to flat, with several radiating carinae to the minimally undulate margin; column yellow, stout, 4 mm long, with a foot 3 mm long.

ETYMOLOGY: From the Latin *deltoideus*, "deltoid or triangular," in reference to the shape of the flower.

TYPE: ECUADOR: ZAMORA-CHINCHIPE: epiphytic between Loja and Zamora, alt. 2800 m, B. Malo s.n., cultivated near Cuenca, flowered in cult. 16 July 1977, C. Luer 1713 (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

This small species may be recognized by the triangular appearance of the solitary flower. Each sepal being slightly convex, the flower is more or less flat and lacking a sepaline cup. The face of the flower is ivory suffused with pale orange-brown, and the widely spread, slender tails are orange-brown. The ovary is comparatively thick with six crested wings.

Masdevallia didyma Luer, sp. nov.

Habitu *M. triaristellae* Rchb. f. et affinis similis, sed pedunculo verrucoso, sepalis lateralibus prope apices acutos in synsepalum anguste oblongum breviter bicaudatum connatis, et petalis oblongis acutis dignoscenda.

Plant very small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 2-4 mm long, with 1-2 short, thin, tubular sheaths, unifoliate. Leaf erect, coriaceous, thick, dark green, speckled and suffused with purple beneath, linear-elliptic, subacute, minutely tridenticulate, the base narrowly cuneate, 2.5-4.5 cm long, 3-4 mm wide. Inflorescence a few-flowered (2-3), contracted raceme of single, successive flowers borne by a slender, erect, verrucose peduncle 4.5-9 cm long, from a node on the secondary stem; floral bract tubular, 3-4 mm long; pedicel 4 mm long; ovary subverrucose, with undulate carinae, 2 mm long; dorsal sepal yellow, marked

with purple, united to the lateral sepals for 2 mm, the free portion broadly triangular, with a verrucose carina externally, contracted into an erect, slender, yellow tail 15 mm long, total length 22 mm, width 6 mm; lateral sepals heavily suffused and veined in purple, connate to within 3 mm of the apices into a narrowly linear-ovate synsepal, minimally gibbous toward the base, the acute apices prolonged into 4 mm long, straight, closely parallel, yellow tails, total length 25-30 mm, 6 mm wide; petals translucent yellow with a purple spot below the middle, oblong, acute, 3.5 mm long, 1 mm wide; lip red-purple, narrowly ovate, rounded at the apex, sagittate at the base, with a pair of slightly undulating carinae extending to above the middle, 4 mm long, 1.5 mm wide; column terete, 4 mm long, with a short foot.

ETYMOLOGY: From the Greek *didymos*, "doubled, twinned," in reference to the pair of short, closely parallel tails of the synsepal.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic along the road between Loja and Zamora, alt. ca. 1700 m, May 1973, B. Malo s.n., cultivated in Cuenca, flowered in cult. 14 July 1977, C. Luer 1705 (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: ZAMORA-CHINCHIPE: same area, 5 June 1976, J. Brenner 96 (SEL); same area, cultivated by Martha Robledo, R. Escobar 1243 (SEL).

This delicate, little species is similar to other members of the Section triaristellae. The narrow, fleshy leaves are flecked with purple beneath, and the verrucose peduncle produces successively a few, distinctive, slender flowers. The slender tail of the dorsal sepal stands erect. The lateral sepals are very narrow and connate to near the apices. Continuing in the same plane from the apices protrudes a closely parallel pair of short, straight tails.

Masdevallia dolichopoda Luer, sp. nov.

Species haec ab *M. simula* Rchb. f. differt inflorescentia quam foliis linearibus verrucosis subaequilonga, racemo paucifloro, floribus successivis pallido flavovirentibus longipedicellatis, pedicello verruculoso, sepalo dorsali suborbiculari concavo caudato, sepalis lateralibus aliquantum minoribus ovatis obliquis acuminatis base transverse carinatis, petalis subrhombeis supra medium unidentatis, labello longe unguiculato suborbiculari postice bilobulis retrorsis, columna bidentata pede longiore.

Plant small, epiphytic, caespitose; roots thick, flexuous. Secondary stems abbreviated, 3-8 mm long, with 2 short, thin, tubular sheaths, unifoliate. Leaf erect, thickly coriaceous, verruculose, narrowly linear, subacute, minutely tridenticulate, the base narrowly cuneate, 2.5-3 cm long, 2-2.5 mm wide. Inflorescence an erect, few-flowered (3-4) raceme, the flowers clear pale yellow-green, long-pedicellate, produced singly successively, the peduncle 1-2 cm long, from a node on the secondary stem; floral bract thin, tubular, deciduous, 3-5 mm long; pedicel verruculose, 10-15 mm long; ovary verruculose, 1.5 mm long; dorsal sepal united to the lateral sepals for barely 2 mm, broadly ovate to suborbicular, concave, the apex acuminate into a tail about 3 mm long, total length 8 mm, 4 mm wide; lateral sepals ovate, oblique, the apices acuminate, connate near the transverse callus above the

base, each 6.5 mm long, 2 mm wide; petals translucent yellow-green, oblong to subrhombic, broadly obtuse, with an acuminate tooth along the labellar margin above the middle, 1.75 mm long, 1.25 mm wide at the tooth; lip pale yellow-green, the blade suborbicular with a pair of acute lobules directed posteriorly, at the rear near the claw, the disc with low converging calli from the bases of the lobules, the base narrowly unguiculate with minute basal auricles, the claw 1.25 mm long, total length 2.75 mm, width 1.5 mm; column 1.5 mm long with a pair of acute wings or teeth near the middle, with a foot 2 mm long.

ETYMOLOGY: From the Greek *dolichos*, "long," and *podion*, "foot," hence "long-stalked," in reference to the long-pedicellate flowers.

TYPES: *ECUADOR*: PICHINCHA: above Chiriboga, alt. 2600 m, along the old road between Quito and Santo Domingo, B. Malo s.n., flowered in cult. 16 July 1977, C. Luer 1714 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

This small species of the section *Rhombopetalae* may be distinguished by densely caespitose, narrowly linear leaves with a minutely verrucose surface. The peduncle emerges from near the base of the abbreviated secondary stem to bear a few, successive, pale yellow-green, long-pedicellate flowers. The lower flowers may reach half the length of the leaves, but as the inflorescence elongates with progressive flowering, the later flowers may reach the tips of the leaves in height. The long pedicel is minutely warty. The flowers, devoid of any spots, are not remarkably different from others in the section. The dorsal sepal is proportionately large and concave with an acuminate apex, and the apices of the smaller lateral sepals are also acuminate. The oblong petals bear a tooth above the middle.

Masdevallia dura Luer, sp. nov.

Planta mediocris, caulibus secundariis crassis sulcatis, foliis erectis longiusculis crassis rigidis duris linearibus base subpetiolatis canaliculatis, racemo paucifloro pedunculo tereti repenti flore ochraceo successivo, sepalis subaequalibus ovatis effusis crassis duris intus guttatis verruculosisque in cupula cylindrica brevi ringenti caudis teretibus rigidis, petalis carnosis ellipticis apice subtridentatis, labello ligulato punctato apice rotundato papilloso base exciso bilobulato, lobulis hemisphaericis profunde concavis.

Plant medium in size, epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, shallowly sulcate, 2-3.5 cm long, enclosed by 1-2 thin, close, tubular sheaths, unifoliate. Leaf erect, thick, coriaceous, rigid, linear to narrowly elliptical, tridentate at the subacute apex, the base gradually narrowed, subpetiolate, channeled, 12-18 cm long, 23-28 mm wide. Inflorescence a few-flowered (3-6), contracted raceme of successive flowers, produced by a horizontally creeping or descending peduncle, 8-10 cm long, terete, with a few, distant bracts, from low on the secondary stem; floral bracts papery, imbricating, 8-10 mm long; pedicel 5-7 mm long; ovary thick, 8-9 mm long, 4-5 mm wide, with multiple raised dots; sepals fleshy, thick, rigid, externally dull yellow, minutely and sparsely pustulate, internally densely spotted with purple and verrucose, ovate, the lateral sepals oblique, connate to each other for about 5 mm into a short, thick, open cylindrical

tube, the apices acuminate into spreading, yellow-orange, rigid, terete tails about 2 cm long, total length of each sepal 32-35 mm, 10-11 mm wide; petals fleshy, cream, marked with purple, elliptical, 5.5 mm long, 2.5 mm wide, with a low, curved callus near the labellar margin, the apex subtruncate with a thick, central, obtuse tooth; lip oblong-ligulate, 7 mm long, 3.25 mm wide, papillose and retuse at the rounded apex, the disc covered with minute, raised purple dots, with a short pair of curved carinae above the middle, the base with a central sinus, bilobed with hemispherical concavities; column white, cylindrical, 6 mm long, with a thick foot.

ETYMOLOGY: From the Latin *durus*, "hard," in reference to a quality of the leaves and flowers.

TYPE: ECUADOR: LOJA: Cordillera de Sabanilla, alt. 2900 m, Sept. 1973, B. Malo s.n., cultivated near Cuenca, flowered in cult. 14 July 1977, C. Luer 1698 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

The flowers of this species are produced successively in a contracted raceme borne by a descending peduncle. The thick, cardboard-like, intensely purple-spotted sepals with their rigid orange tails spread from a short, cylindrical sepaline tube. Nectaries at the base of the lip are well-developed.

Masdevallia echo Luer, sp. nov.

Habitu *M. infractae* Lindl. similis, sed floribus majoribus, cupula sepalorum subglobosa, caudis sepalorum lateralium filiformibus approximate parallelis, petalis distincte tridentatis, labello apice denticulato et angulis laterali-bus labelli acutis differt.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, abbreviated, 1-2 cm long, with 2 short, greenish brown sheaths, unifoliate. Leaf erect, coriaceous, narrowly elliptical to, 10-16 cm long, 18-28 mm wide, the apex subacute to obtuse, tridenticulate, gradually narrowed into a channeled, subpetiolate base. Inflorescence a few-flowered (3-4), contracted raceme of successive flowers at the apex of an erect, stout, triquetrous peduncle, 15-19 cm long, 4 mm in width, from near the base of a secondary stem; floral bract papery, 2-2.5 cm long; pedicel 3 cm long; ovary 6 mm long; sepals olive-green, suffused with red-purple especially within where the surface is minutely pubescent, the dorsal sepal united to the lateral sepals for 18-20 mm, cuneate, the free portion broadly triangular, abruptly contracted into a yellow, filiform tail 5 cm long, total length 75 mm, 14 mm wide, the lateral sepals connate for about 1 cm forming a second, larger mentum above the fold of the basal mentum, each sepal broadly and obliquely triangular, forming with the dorsal sepal a subglobose sepaline cup, abruptly contracted into yellow-green, closely parallel, filiform tails 3.5 cm long, total length 52 mm, 33-38 mm broad spread out; petals white flecked with purple, oblong, 7 mm long, 2 mm wide; the apex tridentate with the middle tooth longest, with parallel, low, smooth thickenings to either side of the shallow, central sulcus; lip white spotted with purple, narrowly oblong-subpandurate, 8 mm long, 2 mm wide, the apex serrulate, subacute, with a pair of forward directed, acute lateral lobes from the folds near the middle, the base truncate, hinged beneath; column terete, greenish white, 6 mm long, with a thick foot.

ETYMOLOGY: Named for the Greek mythological nymph Echo, known by her repetitious voice.

TYPE: PERU: JUNIN: obtained by J & L Orchids from R. Stumpfle s.n., collected near Chanchamayo, cultivated at Easton, Ct., flowered in cult. 8 Nov. 1977, *C. Luer 2127* (HOLOTYPE: SEL); also cultivated by Tony Vigliotti in Ft. Lauderdale, flowered in cult. Aug. 1976, *C. Luer 1638* (SEL).

DISTRIBUTION: Peru.

Very possibly herbarium specimens of this species have been identified as the Brazilian *Masdevallia infracta* Lindl. to account for the report of the latter species from Peru. The flower of *M. echo* is considerably larger with a suborbicular sepaline cup. The long tail of the dorsal sepal is held erect and the two closely parallel tails of the lateral sepals are deflexed in the opposite direction. These features are commonly distorted in dried specimens. The lateral folds of the pandurate lip project with acute angles, and the apex of the lip is denticulate.

Masdevallia elata Luer, sp. nov.

Inter species sectionis *Rhombopetalae* statura grandi, caulibus secundariis elatis, floribus aurantiacis brunneo maculatis, petalis uncinatis, lamina labelli denticulata et columna bidentata dignoscenda.

Plant small but large for the section, epiphytic, densely caespitose; roots fine, flexuous. Secondary stems elongated, 1-4 cm long, unifoliate, with 2-3 tubular, ribbed sheaths. Leaf erect, fleshy, coriaceous, dull green, lightly suffused with purple beneath, very narrowly elliptical to linear, 3-9 cm long, 5-6 mm wide, the acute apex tridenticulate, the base narrowly cuneate, subpetiolate. Inflorescence a floriferous succession of single flowers borne by peduncles up to 1 cm long, from near the apex of the secondary stem; floral bract loose, thin, tubular, 3 mm long; pedicel 3 mm long; ovary 3-winged, pyramidal, 1.5 mm long; sepals widespread, orange, spotted with red-brown, the dorsal sepal elliptical-obovate, acute, 6 mm long, 3 mm wide, connate to the lateral sepals for less than 1 mm, the lateral sepals ovate, oblique, 4 mm long, 2.5 mm wide, the apex shortly acuminate, connate and reflexed at the base below a transverse, thickened, subcarinate fold; petals red-brown, dolabriliform, polygonal, 3 mm long, 2.5 mm wide, the apex subacute, obtusely angled on the upper margin, with a broad, subacute, uncinat process on the lower margin; lip orange-brown, spatulate, 2.5 mm long, 1.5 mm wide, the claw 1 mm long with basal lobules, the lamina more or less elliptical, the apex broadly rounded, denticulate, recurved, with a pair of acute retrorse angles toward the claw; column red-brown, 2 mm long, winged with a pair of short, thick retrorse teeth near the middle, the foot 1.5 mm long.

ETYMOLOGY: From the Latin *elatus*, "tall," in reference to the lengths of the secondary stems and leaves compared to other members of the section.

TYPE: ECUADOR: MANABI: epiphytic in low mountains between Quevedo and Puerto Viejo, alt. ca. 500 m, July 1977, greenhouse acc. no. 77-2678, flowered in cult. 29 Oct. 1977, *C. Luer & C. H. Dodson et al. 2111* (HOLOTYPE: SEL).

DISTRIBUTION: Coastal Ecuador.

This species was found to be locally abundant in one area of the relatively dry mountain ranges of Coastal Ecuador. At the time of its discovery, large clusters of the plants were bearing fruit. They were thought to be a species of *Pleurothallis* because of the well-developed secondary stems. Several months later the plants produced many orange flowers, typical of the "Simula-complex," with spots of brown that imparted a rusty color. Besides the color of the flowers and long secondary stems, the species is distinguished by the uncinatate petals and the denticulate margin of the lip.

Masdevallia empusa Luer, sp. nov.

Species haec *M. ephippium* Rchb. f. cognata, sed habitu et flore minore, cauda sepalis dorsalis deflexa, synsepalo rugoso conduplicato non inflato, petalis cum dente basali et apice labelli laciniato papilloso differt.

Plant medium-sized, epiphytic, caespitose; roots coarse, flexuous. Secondary stems abbreviated, 1-2 cm long, concealed by 1-2 tubular sheaths, unifoliate. Leaf erect, coriaceous, narrowly obovate, 8-11 cm long, 14-18 mm wide, tridenticulate at the subacute apex, the base gradually narrowed to an indistinct, channeled petiole. Inflorescence a congested raceme of several (5-6), successive flowers borne by an erect, sharply triquetrous peduncle 18-21 cm long, from near the base of a secondary stem; floral bracts white, papery, imbricating, 10-18 mm long, concealing the pedicel about 1 cm long; ovary shiny, greenish white, 5 mm long; dorsal sepal red-brown, obovate, connate to the lateral sepals for 8-9 mm to form a subconical cup, the free portion narrowly triangular, the apex attenuated into a deflexed, filiform tail, total length 55 mm, width 7 mm; lateral sepals red-brown, connate about 20 mm into a subcircular lamina, 22 mm long, 19 mm wide, more or less conduplicate, rugose within, forming a short mentum at the base behind a transverse fold, the rounded apex produced abruptly into reflexed, filiform tails about 19 mm long; petals white, dotted with pink, oblong, 7.5 mm long, 2 mm wide, the obtuse apex apiculate, with a low, longitudinal callus above the labellar margin, with a short, blunt, incurved tooth at the base; lip white, dotted with red, pandurate, 7 mm long, 2.6 mm wide, ovate above the middle, the subacute apex denticulate-lacinate, red-papillose, oblong below the middle, the base truncate, hinged beneath; column white, semiterete, 5 mm long, the foot short with an incurved extension.

ETYMOLOGY: From the Latin *empusa*, "a hobgoblin," in allusion to the appearance of the flower.

TYPE: PERU: HUANUCO: epiphytic between Tingo Maria and Pucallpa, alt. ca. 700 m, March 1975, J. Kuhn s.n., cultivated in Easton, Ct., flowered in cult. 8 Nov. 1977, C. Luer 2122 (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

This small relative of *Masdevallia ephippium* Rchb. f. was discovered recently by Janet Kuhn of Easton, Ct., and has been successfully cultivated by her. The lateral sepals of the red-brown flowers are deeply rugose within, much the same as those of *M. ephippium*, but without the saccate inflation. The sepals fold out, much as they do in the Ecuadorian form of *M. ephippium*, not incurved as they are in the Colombian form. The long, narrow, caudate dorsal sepal curves downward to join the reflexed tails of the lateral sepals.

Masdevallia felix Luer, sp. nov.

Species haec *M. calliferae* Schltr. similis sed ovario cristato, caudis sepalorum longioribus et epichilio labelli proportione minore marginibus non-incurvatis sine carinis quinque radiantibus differt.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems narrow, conduplicate, 2-5.5 cm long, unifoliate, enclosed by 2-3 loose, tubular sheaths. Leaf erect, thinly coriaceous, very narrowly elliptical, 15-22 cm long, 17-25 mm wide, carinate dorsally along the midvein, the acute apex tridenticulate, gradually narrowed below into a conduplicate base. Inflorescence a short, 3-6 cm long, several-bracted, purple, more or less horizontal, single-flowered peduncle from the base of the secondary stem; floral bract and pedicel each 5-6 mm long; ovary 3 mm long, with 6 low crests, usually developing into a capsule; sepals dull white, glabrous externally, the dorsal sepal transversely elliptical, 8 mm long, 9 mm wide, connate 5 mm to the lateral sepals to form a short, cylindrical tube, suffused with rose and dotted with red below the middle within, the free portion erect, white, pubescent, obtusely triangular, produced into an erect, dark red tail 25-35 mm long, the lateral sepals subquadrate, oblique, 11 mm long, 9 mm wide, connate 9 mm to form a broad, shallow mentum, suffused with red-orange below the middle with red dots and clumps of red hairs, yellowish white and pubescent above the middle, the obtusely triangular apices produced into tails similar to that of the dorsal sepal; petals yellowish-white marked with dark purple, oblong, 3 mm long, 1.25 mm wide, the apex bivalved, papillose between the laminae, the inner lamina short, denticulate, the outer lamina rounded; lip pandurate, white suffused with pink to red, 4.5 mm long, 2 mm wide, the hypochile thick with obtuse, erect marginal angles, broadly channeled centrally, the base concave, hinged to the column-foot, the epichile deflexed, suborbicular, 1.5 mm long, 1.5 mm wide, shallowly concave with a thickened central lamella flanked by a short marginal lamella to either side; column stout, yellowish white, 3 mm long, with an equally long, stout foot.

ETYMOLOGY: From the Latin *felix*, "fruitful," in reference to the large percentage of capsules produced.

TYPE: *ECUADOR*: PICHINCHA: epiphytic in cloud forest above Chiriboga, alt. ca. 2000 m, along the old road between Quito and Santo Domingo, 1975, B. Malo 21, cultivated at La Ceja, Colombia, by M. & O. Robledo, flowered in cult. 21 January 1978, C. Luer 2285 (HOLOTYPE: SEL, ISOTYPE: JAUM).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: CARCHI: epiphytic in cloud forest along the mountain crest behind Rio Blanco near km 78 from Ibarra to San Lorenzo, alt. 1400 m, 14 Dec. 1961, C. H. Dodson & L. B. Thien 1607 (SEL).

DISTRIBUTION: Northwestern Ecuador.

This species, vegetatively very similar to many other related species, is apparently endemic on the western slopes of the Andes of northern Ecuador. It is characterized by short peduncles that apparently bear only one flower which seems to be autogamous since every flower produces a fruit in cultivation. The white sepals form a well-defined cup dotted with red within, with the free parts widespread with long, slender, maroon tails. The shallow epichile of the lip is acutely deflexed on the hypochile.

Masdevallia figueroae Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis bene effectis unifoliatis, foliis coriaceis ellipticis subpetiolatis, flore solitario pulchro, pedunculo gracili folio subaequilongo, sepalis albis roseo et purpureo suffusis et guttatis in tubum cylindricum connatis partibus libris triangularibus caudis gracilibus extendentis, petalis oblongis apice lobulatis dimidio inferiore in-crassato verruculoso cum dente basali, labello panduriformi bicalloso apice obtuso callo mediano base anguste fisso.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems well-developed, 4.5-7 cm long, unifoliate, enclosed by a loose, tubular sheath and a shorter one at the base. Leaf erect, coriaceous. elliptical, subpetiolate, 8-11 cm long including the 1-2 cm petiole, 18-25 mm wide, the subacute apex tridenticulate, with prominent secondary veins parallel to either side of the midvein, the base narrowed gradually into the channeled petiole. Inflorescence a solitary, showy flower borne by an erect, slender, terete peduncle 8-9 cm long, with a bract near the base, from a node high on the secondary stem; floral bract tubular, 11 mm long; pedicel 15 mm long; ovary 8 mm long, green with purple dots; sepals white to pink, dotted and suffused with lavender to purple, glabrous externally, minutely verrucose and shortly pubescent within, connate 13-14 mm into a slightly curved, sepaline tube, the free portions spreading, triangular, the acute apices attenuated into slender tails, the dorsal sepal obovate, the purple to orange tail 28 mm long, the total length 47 mm, the width 8 mm, the lateral sepals ovate, oblique, with orange tails 23 mm long, the total length 46 mm, 18 mm wide together; petals white marked with purple, oblong, 6 mm long, 3 mm wide, the apex obtusely bilobed with a small apiculum in the sinus, the labellar half thick, verrucose, ending in a short tooth just above the base; lip pandurate, 6.5 mm long, 3.5 mm wide below the middle, 2.5 mm wide above the middle, pink marked with purple, the apical portion white, obtuse, with a small, median callus, the base retuse, narrowly cleft, hinged beneath, the disc with a pair of thick, longitudinal calli; column semiterete, pink spotted with purple, 5 mm long, the foot 2 mm long with a forwardly directed extension.

ETYMOLOGY: Named in honor of Sr. Luis Figueroa of Loja, Ecuador, co-discover of this species.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest at Yangana near Valladolid, alt. 2600 m, July 1975, W. Teague, L. Figueroa & D. Welisch s.n., cultivated by O. Arango near Medellin, Colombia, flowered in cult. 24 Jan. 1978, *C. Luer* 2325 (HOLOTYPE: SEL, ISOTYPE: JAUM).

DISTRIBUTION: Southern Ecuador.

Like very few other species in the genus, the peduncle rises from a node well above the base of a comparatively tall secondary stem. A solitary, colorful flower, with a well-developed sepaline tube, is borne at the apex of a slender peduncle. The sepals are whitish but heavily suffused with pink to purple with spreading orange tails. Within, the surfaces are finely mottled with lavender and shortly pubescent. The petals are thick and verrucose on the lower half. The pink, pandurate lip has a blunt, white apex.

Masdevallia fuchsii Luer, sp. nov.

Species haec *M. constrictae* Poepp. & Endl. affinis sed flore minore caudibus sepalorum multibrevioribus, dente base petalorum incurvato et labello integro ligulato notabilis.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, 15-27 mm long, unifoliate, concealed by a loose sheath. Leaf erect, coriaceous, narrowly elliptic-obovate, petiolate, 4.5-11.5 cm long including the petiole 2-4 cm long, 13-17 mm wide, the tridenticulate apex subacute, the base gradually narrowed into the channeled petiole. Inflorescence a solitary flower borne by a slender, suberect peduncle 4-4.5 cm long with a basal bract, from a node on the secondary stem; floral bract tubular, 8 mm long; pedicel 10-12 mm long; ovary green, lightly pitted, 5-6 mm long; sepals glabrous externally, pubescent above the middle internally, white, veined in orange and suffused with bright orange toward the bases, the dorsal sepal obovate, 23 mm long, 10 mm wide when spread, connate with the lateral sepals for 17 mm into a sigmoid, ventricose, sepaline tube with a widely spread stoma, the free portion broadly ovate, the obtuse apex produced into a recurved, yellow tail 10-12 mm long, the lateral sepals obliquely obovate, 20 mm long, connate and narrowed below the middle into the sepaline tube, concave, the free portions broadly ovate, each 9 mm wide, the obtuse apices produced into tails similar to that of the dorsal sepal; petals translucent yellowish white, oblong, 7.5 mm long, 2 mm wide, the apex obliquely subacute, with a longitudinal, thin lamella along the lower margin terminating at the base in a broad, obtuse, inflexed tooth; lip oblong-ligulate, 5 mm long, 2.5 mm wide, white, green toward the subacute apex, purple toward the truncate base, hinged beneath; column light yellow-green with a purple margin, semiterete, 5 mm long, with a short foot and a short, incurved extension.

ETYMOLOGY: Named in honor of Fred J. Fuchs, Jr. of Naranja, Florida, who, along with Janet Kuhn of Easton, Ct., discovered this species.

TYPE: PERU: HUANUCO: epiphytic between Tingo Maria and Pucalpa, alt. 1700 m, March 1975, F. Fuchs, Jr. & J. Kuhn s.n., cultivated at Easton, Ct., flowered in cult. 7 Nov. 1977, *C. Luer 2113* (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

This species is presently known from only one locality in Peru where it was found growing with *Masdevallia constricta* Poepp. & Endl. Although it is very closely allied to the latter, it maintains its identity well. Vegetatively the two species are essentially identical. The flowers of *M. fuchsii* are about half as large as those of *M. constricta* with much shorter tails (about 1 cm long compared to 3-4.5 cm). The petals of the former are provided with a blunt, inflexed tooth at the base, and the simple lip lacks the lateral angles above the middle.

Masdevallia fuliginosa Luer, sp. nov.

Inter species sectionis *Saccilabiatae* distinguitur floribus parvis, sepalis late ovatis patentibus virescentibus dense et minute fuligineo papillis longicaudatis, petalis bivalvis, labello roseoaureo epichilio transverse ovato profunde concavo intus lamellis radiantibus margine involuto plus minusve dentato.

Plant medium in size, epiphytic, caespitose; roots coarse, flexuous. Secondary stems channeled, slender, 2-4 cm long, unifoliate, enclosed by 2 loose, tubular sheaths. Leaf erect or suberect, thinly coriaceous, carinate along the midvein on the back, very narrowly obovate, 15-30 cm long, 2.5-4 cm wide, the tridenticulate apex subacute, the base gradually narrowed into the conduplicate petiole. Inflorescence a several-flowered (to 10), congested raceme of successive flowers borne by a horizontal to ascending or descending, sparsely bracted peduncle, from a node low on the secondary stem; floral bract tubular, 1 cm long; pedicel 10-15 mm long; ovary 5-6 mm long; sepals glabrous externally, light green, covered by numerous, minute brownish black papillae within, the dorsal sepal transversely ovate, 13-15 mm long, 16-18 mm wide, connate for 5 mm with the lateral sepals to form a widely spread cup, the obtuse apex shortly acuminate into a black, filiform tail 5-8 cm long, the lateral sepals ovate, oblique, each 17 mm long, 15 mm wide, connate 8 mm to form a shallow mentum, the subacute apices produced into tails similar to that of the dorsal sepal; petals brown, oblong, 3.5 mm long, 2 mm wide, the apex bivalved, papillose between the laminae, the inner lamina acute, the outer lamina rounded; lip pinkish orange, spatulate, 8 mm long, 6 mm wide, the hypochile oblong, 4 mm long, 3.75 mm wide, with erect obtuse, marginal angles, cleft centrally, the base concave and hinged to the column-foot, the epichile transversely ovate, 4.5 mm long, 6 mm wide, deeply concave, the sides involute, with 5-7 radiating lamellae within, producing a more or less denticulate margin; column greenish white, stout, 4.5 mm long with a short, thick foot.

ETYMOLOGY: From the Latin *fuliginosus*, "full of soot" (*fuligo*, "soot"), in allusion to the intense brownish black speckling of the sepals.

TYPE: ECUADOR: PICHINCHA: epiphytic in cloud forest near Mindo west of Quito, alt. ca. 1800 m, July 1975, W. Teague & D. Welisch s.n., cultivated by M. & O. Robledo at La Ceja, Colombia, flowered in cult. 17 Oct. 1977, C. Luer 2104 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

Perhaps most closely related to the *Masdevallia erythrochaete-gaskelliana* complex of Central America and *M. houtteana* Rchb. f. of Colombia, this species occurs locally on the western slopes of the Andes of Ecuador. It may be recognized by its blackish-brown, "sooty" flowers of a similar size. The color is imparted by numerous purplish or brownish black specks covering the sepals, and sometimes arranged in rows along the veins. The sepals are broadly or transversely ovate with long, slender, black tails. The lip is not remarkably different. In fact, it is somewhat variable. The lamellae within the concave epichile may extend to the border to create a denticulate margin, or they may abate short of the edge to leave it entire.

Masdevallia gigas Luer & Andreetta, sp. nov.

Planta grandis epiphytica caespitosa, foliis anguste elongatis caulibus brevibus, pedunculo longo suberecto racemo paucifloro, floribus grandibus successivis, sepalis pallide roseo brunneis longicaudatis cupulam patentem formantibus cum mento obtuso compresso, petalis bivalvatis apice verruculosus, labello spatulato epichilio orbiculari concavo carinulis multis radiantibus.

Plant large, epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, 3-7 cm long, channeled, mostly enclosed by a somewhat longer, loose sheath and a short 1 or 2 at the base, unifoliate. Leaf erect, thinly coriaceous, narrowly obovate, 15-40 cm long, 2.5-3.5 cm wide, carinate on the back, the apex acute, tridentate, the base gradually narrowed into a conduplicate petiole. Inflorescence a progressively contracted, few-flowered raceme to 20 cm long of large, successive flowers, borne on an ascending, suberect peduncle 20-45 cm long, from a node low on the secondary stem; floral bract 1-2 cm long; pedicel 2-4.5 cm long; ovary 6-7 mm long; sepals light pinkish brown, connate below the middle to form a widely patent sepaline cup, with red-brown tails about 6 cm long, the dorsal sepal broadly ovate 30-35 mm long, 27 mm wide, connate to the lateral sepals for 12 mm, the obtuse apex acuminate into the tail, the lateral sepals ovate, subcarinate externally, each about 40 mm long, 23 mm wide, connate to near the middle to form a deep, obtuse, compressed mentum, the acute apices acuminate into the tails; petals thick, spatulate, white marked with brown, 4 mm long, 2.5 mm wide, carinate externally, bivalved at the rounded apex, with brown verrucosities between the laminae, the inner lamina acute and denticulate; lip pink, spatulate, 10 mm long, 6 mm wide, the hypochile 4 mm long, 3 mm wide, with subacute, erect, marginal angles, shallowly cleft between, the base curved, concave, hinged to the column-foot, the epichile suborbicular, 6 mm long, 6 mm wide, concave with upturned margins, with multiple, radiating lamellae within; column light yellow, stout, 5 mm long, with a foot 3 mm long.

ETYMOLOGY: From the Latin *gigas*, "a mythological giant," in reference to the size of the plant and flowers.

TYPE: *ECUADOR*: CARCHI: epiphytic in cloud forest of the western slopes of the Andes, alt. 1800-2200 m, Oct. 1975, A. Andreetta & A. Hirtz 2, cultivated in Cuenca, flowered in cult. 12 July 1977, *C. Luer 1690* (HOLOTYPE: SEL); same area, 21 Feb. 1978, *C. Luer, J. Luer & A. Hirtz 2681* (SEL).

DISTRIBUTION: Northern Ecuador.

This large, rosy-flowered species is characterized by the elongated, suberect peduncle which often lists with the weight of a flower. The first flower produced on each peduncle is the largest, the subsequent flowers becoming progressively smaller. The dull pinkish brown color is composed of numerous, microscopic, brownish-purple dots on a dull yellow background. Among individual plants of the species, the epichile of the lip is somewhat variable. The degree of concavity and the number of radiating lamellae contained therein are not constant.

Masdevallia hajekii Luer, sp. nov.

Planta mediocris rhizomate ascendenti, caulibus secundariis elongatis gracilibus, foliis coriaceis ellipticis petiolatis, pedunculo pediceloque elongato, flore solitario nitido roseo atropurpureo maculato, cupula sepalorum ringenti, caudis filiformibus albiviridibus, petalis oblongis basi cum dente, labello oblongo-ovato recurvato punctato, pede columnae elongato.

Plant medium in size, epiphytic, caespitose to shortly repent or ascending; roots slender, flexuous. Secondary stems slender, 2.5-4.5 cm long, enclosed by 2 tubular sheaths, unifoliate. Leaf erect, coriaceous, narrowly elliptical, 6-13 cm long including the petiole, 12-17 mm wide, the apex subacute, tridentate, the base narrowly cuneate into a channeled petiole 2-5 cm long. Inflorescence single-flowered, the peduncle slender, erect, with a bract near the base, from a node on the secondary stem; floral bract tubular, 15-20 mm long; pedicel 35-48 mm long, dotted with purple; ovary 5-7 mm long, green with purple dots; sepals glossy, pink, intensely spotted with dark purple, minutely pubescent near the middle within, the dorsal sepal oblong, 21 mm long, connate to the lateral sepals for 15 mm into a gaping, campaniform sepaline tube, the free portion dilated, triangular, 12 mm wide, the subacute apex produced into a slender, greenish white tail 33 mm long, the total length 53 mm, the lateral sepals oblong, oblique or obscurely sigmoid, about 23 mm long, 13 mm wide, connate to the column-foot for about 9 mm, connate to each other for 12 mm into a deep, subacute mentum, tapered at the subacute apices into deflexed, filiform tails 27 mm long; petals white, spotted with bright purple, oblong, 8.5 mm long, 2-3 mm wide, the apex more or less rounded with an obtuse tooth occupying the lower part, the labellar margin with a longitudinal callus ending in a blunt tooth near the base, the base oblique; lip fleshy, pink spotted with purple, oblong-ovate, recurved, 12 mm long, 5 mm wide spread, narrowed toward the truncate apex with a protruding, thick, yellow-orange callus at the middle, the base truncate, notched, hinged beneath, the disc with a low, thick pair of longitudinal calli; column stout, white flecked with bright purple, 7 mm long, with an equally long foot with a narrow, recurved extension.

ETYMOLOGY: Named in honor of Dr. Carlos Hajek of Cochabamba, Bolivia, who discovered this species.

TYPE: *BOLIVIA*: COCHABAMBA: between Cochabamba and Villa Tunari, alt. ca. 2700 m, Feb. 1973, Janet Kuhn s.n., cultivated in Easton, Ct., flowered in cult. 7 Nov. 1977, *C. Luer 2114* (HOLOTYPE: SEL).

DISTRIBUTION: Bolivia.

This showy species was first discovered by Dr. Hajek about 1965. Plants found more recently by Janet Kuhn have been cultivated by her in Easton, Connecticut. Vegetatively the species is characterized by an elongated secondary stem and a petiolate leaf. The large, shiny, pink flower dappled with large, purple spots and with spreading, white tails looks like a wet, purple-spotted frog leaping from the foliage.

Masdevallia instar Luer & Andreetta, sp. nov.

Masdevalliae xanthinae Rchb. f. et affinitatibus cognata a quibus differt statura grandi, mento sepalorum lateralium prominenti, cornu basi petalorum crasso obtuso et labello elliptico infra apicem truncatum constricto.

Plant medium-sized, epiphytic, caespitose; roots slender, flexuous. Secondary stems terete, 2-4 cm long, unifoliate, clothed by 2 brown, tubular sheaths. Leaf erect, coriaceous, narrowly obovate to elliptical, petiolate,

6-11 cm tall including the 1.5-3 cm petiole, 16-23 mm wide, the subacute apex tridenticulate, the base narrowly cuneate into the slender petiole. Inflorescence a solitary flower borne by an erect, slender peduncle, 6-11 cm long, with a narrow bract near the base, from low on the secondary stem; floral bract close, tubular, 8-14 mm long; pedicel 10-20 mm long; ovary 9-10 mm long; sepals yellow, minutely flecked with red within, with slender red-purple to orange-brown tails 2-5 cm long, connate basally for 4-5 mm into a shallow cup, the dorsal sepal ovate, 14-17 mm long, 11-14 mm wide, subcarinate, the apex obtuse to rounded, abruptly produced into the erect tail, the lateral sepals ovate, oblique, 12-15 mm long, 11-13 mm wide, the apices similarly produced into deflexed tails; petals white, oblong, 6 mm long, 2 mm wide, the truncate apex bilobed with a much smaller lobule in the sinus, with a thick carina along the lower margin terminated at the base in a thick, obtuse, retrorse horn; lip erect, cream, dotted with purple, elliptical, 4.5-5 mm long, 3 mm wide, constricted below the purple, truncate, minimally de-curved apex, with a central callosity; column stout, semiterete, white marked with purple, 4.5 mm long, with a forwardly angled foot 3 mm long, the apex incurved.

ETYMOLOGY: From the Latin *instar*, "a likeness, or an image," in reference to the similarity of the species to others in the section.

TYPE: *ECUADOR*: LOJA: epiphytic in cloud forest on Cajanuma, alt. 2500-2700 m, July 1973, A. Andreetta 4, cultivated in Cuenca, flowered in cult. 12 July 1977, *C. Luer 1691* (HOLOTYPE: SEL, ISOTYPE: QCA).

ADDITIONAL MATERIAL EXAMINED: *PERU*: without locality, R. Stumpfle s.n., cultivated by M. & O. Robledo at La Ceja, Colombia, flowered in cult. Oct. 1977, *C. Luer 1937* (SEL), *R. Escobar 1731* (JAUM).

Although a flowering specimen of this species is easily recognized, it is very similar to many others in the *Masdevallia xanthina* alliance. In habit it resembles most the Venezuelan *M. triangularis* Lindl., but the angles of the junction of the sepals of latter are obtuse, and the lip is widest below the reflexed, denticulate apical lobule. The description of *M. instar*, however, most closely approaches the smaller *M. xanthina* and its host of allies. Most distinctive is the elliptical lip with the constriction just below the truncate apex.

Masdevallia janetiae Luer, sp. nov.

Masdevalliae vespertilionis Rehb. f. affinissimis, sed caudis divergentibus et epichilio labelli transverse elliptico applanato dignoscenda.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems 2-3 cm long, channeled, clothed by 1-2 close-fitting sheaths, unifoliate. Leaf erect, thinly coriaceous, narrowly obovate, carinate dorsally, 8-13 cm long, 15-20 mm wide, the apex acute, tridenticulate, the base gradually tapered into a conduplicate petiole. Inflorescence a few-flowered (2-3), congested raceme of successive flowers borne by a slender, descending, red-purple peduncle 7-10 cm long, from a node low on the secondary stem; floral bract 5-7 cm long; pedicel 8-10 mm long; ovary 4 mm long, 4 mm wide, purple with 6 irregular, green wings; sepals more or less flat and widely spread, glabrous externally, shortly pubescent within, yellowish, irregularly

dotted and spotted with brown-purple, ovate, the subacute apices terminated by diverging, filiform, yellowish tails about 3 cm long, the dorsal sepal 14 mm long, 11 mm wide, connate to the lateral sepals for 3-4 mm, the lateral sepals 15 mm long, 15 mm wide, connate for 14 mm; petals oblong-ligulate, 5 mm long, 2 mm wide, light to dark yellow marked with purple, the rounded apex bivalved with purple papillae between the laminae; lip white, fleshy, spatulate, 6.5 mm long, 6 mm wide, the hypochile thick, deflexed, 4 mm long, 3.5 mm wide, with elevated, rounded margins, cleft centrally, extending forward as a minutely papillose callus, the epichile transversely elliptical to suborbicular, 4 mm long, 6 mm wide, flat to minimally concave, covered with minute, pink verrucae; column stout, ivory, 4.5 mm long, with a thick foot.

ETYMOLOGY: Named in honor of Janet Kuhn of Easton, Ct., who discovered this species.

TYPE: PERU: HUANUCO: epiphytic between Tingo Maria and Pucalpa, alt. ca. 1700 m, March 1975, Janet Kuhn s.n., cultivated at Easton, Ct., flowered in cult., 9 Nov. 1977, *C. Luer 2137* (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Peru.

Masdevallia janetiae is the first chimaeroid species to be discovered in Peru, hence by far the most southernly distributed species of the section. Superficially, it is very similar to *M. vespertilio* Rchb. f., but it is immediately distinguished from the latter by the lip. Instead of a shell-shaped epichile with broad, rounded, incurved, lateral margins and completely smooth within, the epichile of *M. janetiae* is more or less rounded and flat, and studded with minute, pink verrucosities. The flowers of both species are relatively small to medium-sized for the section; they are of similar shape except that the tails of *M. janetiae* are more divergent; and the sepals of both are more or less flat, shortly pubescent, yellowish and irregularly marked with minute and somewhat larger confluent spots of brownish purple.

Masdevallia kuhnorum Luer, sp. nov.

Species haec ab *M. bicolor* Poepp. & Endl. et affinitatibus differt pedunculo quam foliis brevior, sepalis in cupulam sepalorum alte connatis, synsepalis verrucosis late ovatis caudibus brevibus et labello late oblongo.

Plant medium in size, epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, abbreviated, 1-2 cm long, enclosed by 2-3 short, basal sheaths, unifoliate. Leaf erect, fleshy, coriaceous, narrowly obovate, subpetiolate, 9-16 cm long, 15-28 mm wide, obtuse to rounded at the apex, tridenticulate, the base gradually narrowed into an indistinct, channeled petiole. Inflorescence a congested, few-flowered (3-5) raceme of successive flowers, at the apex of a stout, suberect, triquetrous peduncle 8-11 cm long, with a bract at the base, from a node low on a secondary stem; floral bracts imbricating, papery, ca. 8 mm long; pedicel 5 mm long; ovary 4 mm long; dorsal sepal pale green, connate with the lateral sepals for 10-11 mm into a broad, cylindrical, sepaline tube, oblong-obovate, the free portion broadly triangular, acuminate into a thick, erect tail, the total length 36-42 mm, width 6-8 mm; lateral sepals maroon, greenish along the veins, verrucose within, connate ca. 2 cm into a broadly ovate synsepal 29-40 mm long, 15-20 mm wide,

with a broad, shallow mentum, the free, acuminate, acute apices green or maroon, 6-10 mm long; petals white, dotted with purple, oblong-ovate, 8 mm long, 3.5 mm wide, the apex tridentate, minutely papillose, with a longitudinal callus above the lower margin, terminating in a rounded prominence above the dilated base; lip yellow, dotted with red-brown, broadly oblong, 8 mm long, 4.5 mm wide, with a diagonal pair of marginal folds above the middle, ovate above the folds, the apex obtuse, papillose, the base subtruncate, shortly hinged beneath; column semiterete, green, edged in purple, 6 mm long, the foot spotted, 4 mm long.

ETYMOLOGY: Named in honor of Janet and Lee Kuhn of J & L Orchids, Easton, Ct., whose successful cultivation of this species and many others has so greatly contributed to the investigation of the genus.

TYPE: PERU: HUANUCO: epiphytic between Tingo Maria and Pucalpa, alt. ca. 1100 m, March 1975, Janet Kuhn s.n., cultivated in Easton, Ct., flowered in cult., 8 Nov. 1977, *C. Luer 2130* (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

The flowers of this species are somewhat variable in size and color. Both dorsal and lateral sepals of some specimens are intensely suffused with purple, others are mostly green. The length of the tails of the lateral sepals is also variable, but short, nevertheless. The sepaline tube is deep, the synsepal is verrucose, the petals are furnished with a bulbous callus above the base, and the lip is broadly oblong.

Masdevallia limax Luer, sp. nov.

Ab *M. ventricularia* Rchb. f. et affinibus distinguitur tubo sepalorum aurantiaco lato nutanti supra medium deflexo stomate cucullato, petalis obliquis apice tridentatis base cum dente obliquo inflexo et labello ovato canaliculato supra medium anguste oblongo obtuso.

Plant small, epiphytic, caespitose; roots fine, flexuous. Secondary stems slender, 10-15 mm long, clothed by a loose, tubular sheath, unifoliate. Leaf erect, coriaceous, petiolate, elliptical, 5-7.5 cm long, including the 1.5-2.5 cm long petiole, 11-15 mm wide, the apex acute, tridenticulate, the base cuneate into the petiole. Inflorescence a solitary, nodding, tubular, bright orange flower borne by a slender, erect peduncle 3-4 cm long, with a basal bract, from the base of the secondary stem; floral bract tubular, 3-4 mm long; pedicel 4-5 cm long; ovary 3 mm long; sepals glabrous except for the free portions pubescent within, the dorsal sepal connate for 13 mm to the lateral sepals which are connate to each other for 9 mm to form a broad, ventricose tube, somewhat bent forward above the middle to form a hooded stoma, the dorsal sepal oblong, curved, concave, carinate, 16 mm long, 4 mm wide, the free portion broadly ovate, obtuse, produced into a straight 7 mm long tail, the lateral sepals concave-ventricose at the middle, 13 mm long, 11 mm broad together and spread out, the free portions broadly ovate, oblique, produced into tails similar to that of the dorsal sepal; petals light orange, oblong, oblique, 6 mm long, 1.5 mm wide, the apex truncate, tridentate, with a longitudinal carina along the lower margin ending in a thickened, inflexed process at the extreme of the oblique base; lip orange, ovate, 5.5 mm long, 2.5 mm wide, narrowed above the middle with deflexed margins, the apex

narrowly oblong, obtuse, the disc broadly and shallowly channeled, the base subcordate, hinged beneath; column semiterete, greenish white, 4 mm long, the foot 2 mm long with an incurved extension.

ETYMOLOGY: From the Latin *limax*, "a slug" in allusion to the appearance of the flower.

TYPE: *ECUADOR*: TUNGURAHUA: epiphytic in a tree on the slopes of the Rio Pastaza near Baños, alt. 2000 m, 1974, A. Andreetta s.n., cultivated near Cuenca by B. Malo, flowered in cult. 5 Feb. 1978, C. Luer 2472 (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

This very distinct species is known from a single collection by Padre Andreetta in an area presumably fairly well known botanically. The little, orange, sepaline tubes are bent forward above the middle so that the opening of the flower, surrounded by the three short tails, faces more or less downward. The tails of the lateral sepals resemble stalked eyes emerging from the head of a slug as the fat, shell-less body perches upon the stem of a freshly devoured flower.

Masdevallia lotax Luer, sp. nov.

Masdevalliae velutinae Rchb. f. similis, sed foliis parvis angustissimis, flore albo parvo cum cupula sepalorum suborbiculari bene effecta, pubescentia carnosa, caudis filiformibus quam sepalis duplo- vel triplolongioribus, petalis bivalvatis et labello carnoso deflexo suboblongo epichilio parvissimo in duo partes concavas divisio notabilis.

Plant small, epiphytic, forming dense, caespitose masses; primary stem shortly creeping, producing a secondary stem every 3-5 mm; roots fine, flexuous. Secondary stems abbreviated, 1-2 cm long, concealed by a short, thin, tubular sheath, unifoliate. Leaf erect, coriaceous, linear to very narrowly obovate, sulcate, carinate on the back, acute, tridenticulate, 6-10.5 cm long, 4-6 mm wide. Inflorescence a single flower produced by a slender, horizontal or descending peduncle 5-8 cm long, from a node low on the secondary stem; floral bract 5-6 mm long; pedicel 6-12 mm long; ovary 3-4 mm long, with low, undulating carinae, green on rose; sepals united to near the middle into a gaping, suborbicular, sepaline cup, white, glabrous externally, densely beset by short, pointed papillae or thick hairs within, dotted with pink to orange near the bases, the apices produced abruptly into maroon, filiform tails about 2.5 cm long, the dorsal sepal united to the lateral sepals for 5 mm, transversely ovate, the apex rounded, 8 mm long, 11 mm wide, the lateral sepals connate for 8 mm into a broad, concave synsepal, suffused with brown centrally toward the base, each broadly ovate, obtuse, 10 mm long, 9 mm wide; petals white marked with purple, oblong-ligulate, 4 mm long, 1.5 mm wide, the rounded apex bivalved with papillae between the laminae; lip fleshy, white speckled with pink, more or less oblong, thickened and broadened near the middle, 4.5-5 mm long, 3 mm wide, the hypochile deflexed, concave and curved at the base, with obtuse lateral angles flanking the thickened, broadly sulcate central portion, the epichile 1.5 mm long, 2.5 mm wide, transversely elliptical, concave, with thickened margins, divided into 2 small concavities by a central keel; column stout, white, 3 mm long, with a foot nearly as long.

ETYMOLOGY: From the Greek *lotax*, "a buffoon or clown," in allusion to the fancied face seen in the flower.

TYPE: *ECUADOR*: PASTAZA: epiphytic in rain forest near Mera, west of Puyo, alt. 1000 m, April 1973, Janet & LeRoy Kuhn & J. Brenner s.n., cultivated at Easton, Ct., flowered in cult., 7 Nov. 1977, *C. Luer 2120* (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: PASTAZA: same area as above, cultivated at Puyo, flowered in cult., March 1976, *Joe Brenner 16* (SEL).

The free-flowering "clown," as it has become affectionately known since it was first found, is distinguished by the dense clump of small, very narrow leaves. The solitary, white flowers are produced frequently on little, horizontal peduncles. The sepals form a distinct cup which is lined by a blanket of short, thick hairs. The dark-tipped petals flank the column like beady eyes to either side of a nose, and the lip below is easily interpreted as a mouth, all in the center of a whiskery face.

Masdevallia maloi Luer, sp. nov.

Planta grandis epiphytica caespitosa, caulibus secundariis semi-teretibus supra canaliculatis unifoliatis, foliis erectis rigidis linearibus acutis base conduplicatis, flore solitario grandi, pedunculo pedicelloque subaequilongo folio dimidio, sepalis crassis rigidis strictis expansis flavis extus purpureo punctatis apicibus anguste acuminatis, cupulo sepalorum cylindrico, petalis ellipticis apice rotundatis leviter bicallosis, labello oblongo punctato apice obtuso papilloso.

Plant large, epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, semi-terete below, channeled above 6-8 cm long, unifoliate, enclosed by a loose, whitish, papery sheath, and another 1-2 shorter ones at the base. Leaf erect, linear, thick, rigid, coriaceous, tridenticulate at the acute apex, the base subpetiolate, conduplicate, 21-30 cm long, 17-22 mm wide. Inflorescence a large, solitary flower borne on a terete peduncle, green with small purple spots, 4-13 cm long, from near the base of a secondary stem; floral bract tubular, speckled with purple, 1.5-2 cm long; pedicel similarly speckled, 6-7 cm long; ovary dotted with purple, 1 cm long; sepals fleshy, rigid, straight, yellowish, subverrucose within, with minute, brown-purple spots externally, the dorsal sepal united to the lateral sepals for 10 mm into a cylindrical sepaline cup, the free portion narrowly triangular, erect, the apex attenuated into a narrow, semiterete tail, total length 6-9 cm, width 13 mm, the lateral sepals connate for 8 mm, ovate, oblique, spreading, attenuated into tails similar to the dorsal sepal, total length 6-8 cm, each 12 mm wide; petals white suffused with purple, elliptical, rounded at the apex, with a low, smooth, oval callus along the labellar margin and a similar, smaller callus on the opposite half, 9.5 mm long, 4 mm wide; lip oblong, cream with multiple, raised, purple spots, the apex obtuse, papillose, the margins undulate, the base truncate, narrowly hinged below, 11 mm long, 4-5 mm wide; column yellowish white, terete, 8 mm long, with a stout foot.

ETYMOLOGY: Named in honor of Dr. Benigno Malo y Vega of Cuenca, Ecuador, who discovered this species.

TYPE: *ECUADOR*: LOJA: Cordillera de Sabanilla in the south of the province, alt. 2900 m, September 1973, B. Malo 18, cultivated in Cuenca, flowered in cult., 11 July 1977, *C. Luer 1685* (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This remarkable species is related to *Masdevallia fractiflexa* Lehm. & Krzl. Vegetatively *Masdevallia maloi* is a considerably larger plant. The long, narrowly linear leaves are curved and more or less conduplicate. The fleshy flower is also larger, the sepaline cup is smaller and cylindrical without a mentum, and the spreading, rigid tails are straight, not at all reflexed. The apex of the petal is rounded instead of acute, and the apex of the lip is obtuse instead of obscurely three-lobed.

Masdevallia mentosa Luer, sp. nov.

Planta pusilla epiphytica caespitosa, caulibus secundariis abbreviatis unifoliatis, foliis crassis ellipticis subacutis subpetiolatis, pedunculo gracili triquetro folio duplosuperanti, racemo contracto paucifloro, floribus successivis carnosus viridibus purpureo maculosis, sepalis libris acutis, sepalis laterali-bus basi connatis et cum pede columnae mentum profundum formantibus, petalis oblongis obliquis obtusis basi callo rotundato, labello elliptico apice rotundato rubro punctato.

Plant very small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 2-3 mm long, unifoliate, with 2-3 short, thin, tubular sheaths. Leaf erect, thick, coriaceous, elliptical, subacute at the tridenticulate apex, the base cuneate, subpetiolate, 2-3 cm long, 8-9 mm wide. Inflorescence a contracted, few-flowered (2-3) raceme of successive flowers at the apex of a slender, triquetrous peduncle, 4.5-5.5 cm long, ascending from low on the secondary stem; floral bracts imbricating, 4-5 mm long; pedicel 4-5 mm long; ovary green, 2 mm long; sepals not widely spread, fleshy, green, marked with purple, the dorsal sepal ovate, acute, united to the lateral sepals for 2 mm, 11 mm long, 4.5 mm wide, the lateral sepals triangular, acute, united at the base for about 2 mm, and forming with the column-foot a deep mentum, each 11 mm long, 5 mm wide, with a short, sparse, red pubescence within toward the base; petals pale yellow-green, narrowly oblong, oblique, the apex obliquely lobed, dilated near the base on the labellar margin, overlaid by a rounded callus, 6 mm long, 2 mm wide; lip elliptical, rounded at the apex, the margin more or less erect toward the retuse base, hinged beneath, yellow, irregularly spotted with red, 8 mm long, 3.5 mm wide; column terete, 4.5 mm long, with a foot 4 mm long with an incurved extension.

ETYMOLOGY: From the Latin *mentosus*, "provided with a chin," in reference to the prominent mentum of the flower.

TYPE: *ECUADOR*: PASTAZA: epiphytic in rain forest 20 km east of Puyo, alt. ca. 600 m, 3 Aug. 1977, *C. Luer, J. Luer & J. Brenner 1814* (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

Only a single plant of this little species was found by Joe Brenner among the branches of a felled rain-forest tree. Vegetatively the small tufted plant is not remarkable. The peduncle, void of any bract, is slender and

sharply three-angled. The comparatively large, fleshy, green flowers marked with purple do not spread widely. The most marked feature of the flower is the deep mentum formed by a 4 mm long column-foot and the bases of the lateral sepals. The apices of the essentially free sepals are acute without tails.

Masdevallia microsiphon Luer, sp. nov.

Species haec *M. delphinae* Luer affinis sed statura multiminore et tubo sepalorum albo brevipedicellato caudis crassissimis latissimis brevissimis notabilis.

Plant very small, epiphytic, caespitose; roots fine, flexuous. Secondary stems slender, 6-8 mm long, unifoliate, enclosed by 1-2 thin, tubular sheaths. Leaf suberect, coriaceous, narrowly obovate, 3-3.5 cm long, 5-6 mm wide, the obtuse apex tridenticulate, the base gradually narrowed into a slender petiole about 1 cm long. Inflorescence an erect, distantly few-flowered (3-5) raceme of minute, simultaneous, tubular flowers, borne by a filiform peduncle, up to 12 cm long including the rachis, from a node low on the secondary stem; floral bract thin, translucent, 2 mm long; pedicel and ovary each 1.5 mm long; sepals greenish white, forming an arched, cylindrical, sepaline tube, 4-5 mm long, with broad, thick, obtuse, yellow tails 1-1.5 mm long, the dorsal sepal obovate-oblong, concave, 6 mm long, 2.5 mm wide, connate to the lateral sepals for 4.5 mm, the free portion broadly obtuse, the lateral sepals connate 2.5 mm into an oblong, bifid lamina, 5.5 mm long including the tails, 3 mm wide, forming an obtuse mentum with the column-foot; petals translucent white, linear-oblong, 1.5 mm long, 0.3 mm wide, the truncate apex more or less retuse, with a thin, longitudinal callus along the labellar margin; lip yellow, oblong, 2.5 mm long, 1.25 mm wide, the apex rounded, the base subcordate and channeled to the middle, with a pair of obtuse, angled, marginal calli above the middle; column greenish white, semiterete, 2 mm long with a foot 1 mm long.

ETYMOLOGY: From the Greek *mikros*, "small," and *siphon*, "tube," in reference to the minute sepaline tube.

TYPE: *ECUADOR*: LOJA: western slopes of the cordillera, alt. 2000 m, Dec. 1974, B. Malo s.n., cultivated near Cuenca, flowered in cult. 16 July 1977, C. Luer 1719 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This very small, very non-orchidaceous-appearing species has little to recommend it to hobbyists save for its claim to membership in the regal genus *Masdevallia*. From a few weak, little leaves, the hair-like flower stalk bears a few, distant, minute, tubular flowers, colorless except for the blunt, yellowish apices produced into thick, stunted tails.

Masdevallia morenoi Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis brevibus unifoliatis, foliis coriaceis anguste ellipticis sensim subpetiolatis, flore solitario pallido flavovirenti, pedunculo tereti folio duplongiore, sepalis tenuibus caudis gracilibus brevibus divergentibus, cupulo sepalorum brevi, petalis spatu-

latis obliquis acutis cum angulo margine inferiore incrassato, labello rubro punctato elliptico obscure trilobato, lobis lateralibus late rotundatis, lobo antico anguste obtuso, disco incrassato bicarinato.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems short, terete, 4-7 mm long, enclosed by 2 thin, tubular sheaths, unifoliate. Leaf erect, coriaceous, narrowly elliptical, 2-3.5 cm long, 5-6 mm wide, tridenticulate at the subacute apex, gradually narrowed to a subpetiolate base. Inflorescence a solitary flower borne by a slender, terete peduncle, 7-8 cm long, from low on the secondary stem; floral bract thin, transparent, 3 mm long; pedicel 3.5 mm long; ovary with low, undulate wings, 3-4 mm long; sepals thin, pale yellow-green, glabrous, minutely dotted with purple within especially along the veins, with diverging tails less than 1 cm long, the dorsal sepal united to the lateral sepals for 4 mm into a short, open cup, the free portion triangular, the apex acuminate into a slender tail, total length 17 mm, width 4 mm, the lateral sepals connate for about 3 mm, ovate, oblique, the apices produced into tails similar to the dorsal sepal, total length 11 mm, 9 mm wide together; petals greenish white, obovate-spatulate, oblique, 3.5 mm long, 1.5 mm wide, apiculate at the acute apex, the claw linear, with a thickened, obtuse angle near the middle of the labellar margin; lip pale yellow-green with red dots, elliptical, 4.25 mm long, 2.25 mm wide, obscurely 3-lobed, the lateral lobes near the middle, thin, broadly rounded, the apex narrow, obtuse, the base truncate, hinged below a short sinus, the disc thickened into a pair of low carinae above the middle; column terete, the lower margin edged in purple, 3 mm long, with a short foot.

ETYMOLOGY: Named in honor of Dr. Luis Moreno of Santa Cruz, Bolivia, who discovered this species.

TYPE: *BOLIVIA*: SANTA CRUZ: north of Caranda ca. 25 km SW of Buena Vista, alt. ca. 450 m, July 1975, L. Morneo s.n., cultivated by E. Marshall, Orlando, Florida, flowered in cult., 26 April 1977, *C. Luer 1606* (HOLOTYPE: SEL).

DISTRIBUTION: Bolivia.

This little species, apparently without close affinities, may be recognized by the small, solitary, greenish flower borne by a thin, erect peduncle which tops the clump of leaves by more than twice the height. The oblique, unguiculate petals are thickly angled at the lower margin, and the lip is provided with thin, broadly rounded, lateral lobes.

Masdevallia norops Luer & Andreetta, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis unifoliatis, folio coriaceo anguste elliptico subacuto longipedicellato, flore solitario fulgenti, pedunculo gracili folio subaequilongo, sepalis flavis aureo suffusis minute pubescentibus caudis gracilibus viridibus, sepalo dorsali elliptico canaliculato, sepalis lateralibus falcatis concavis, petalis oblongis cum dente basali parvo, labello oblongo acuminato pubescenti.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems blackish, slender, 2-4 cm long, unifoliate, enclosed by 2 tubular sheaths. Leaf erect, coriaceous, long-petiolate, narrowly elliptical-obo-

vate, 9-16 cm long including the 3.5-7 cm petiole, 16-24 mm wide, the tridenticulate apex subacute, the base cuneate into the slender, channeled petiole. Inflorescence a solitary, colorful flower produced by an erect, slender peduncle 6-10 cm long, with a bract below the middle, from a node low on the secondary stem; floral bract 12-14 mm long; pedicel 20-22 mm long; ovary dark-brown, pitted, 7-10 mm long; sepals light yellow suffused with bright orange, the margins minutely cilio-erose, the laminae pubescent above the middle, the acute apices acuminate into slender, green tails 3-4 cm long, the blade of the dorsal sepal deflexed, elliptical, concave, channeled, 17-18 mm long, 11 mm wide, connate 5 mm with the lateral sepals to form a shallow cup, the total length 47-50 mm, the lateral sepals strongly falcate, each 40 mm long, 5-6 mm wide, connate 5 mm to form a mentum that accommodates the apex of the lip, the lateral margins incurved, the attenuate tails crossing; petals yellow, oblong, 7.5 mm long, 3 mm wide, the apex oblique, subacute, with a small apical lobule, the lower half with a longitudinal callus ending in a subacute, retrorse tooth at the base; lip orange, oblong, 7 mm long, 3 mm wide, the apex shortly acuminate, acute, minutely pubescent above the middle, with a pair of low, parallel calli, the base truncate, hinged to the column-foot; column light yellow, semiterete, 5.5 mm long, with a foot 3 mm long.

ETYMOLOGY: From the Greek *norops*, "bright, gleaming," in allusion to the bright yellow and orange flowers.

TYPE: *ECUADOR*: NAPO: epiphytic in Quichos Valley near Rio Solada, alt. ca. 1500 m, Jan. 1976, A. Andreetta & A. Hirtz 11, cultivated in Cuenca, flowered in cult., *C. Luer* 2469 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

Apparently without close relatives, this species is easily recognized by its single, bright yellow and orange flower. The dorsal sepal folds forward with an erect green tail. The markedly falcate lateral sepals with incurved margins form a prominent mentum which is filled by the reclining, minutely pubescent lip. The green tails of the lateral sepals commonly cross below.

Masdevallia odontopetala Luer, sp. nov.

Inter species sectionis *Alaticaulium* Krzl. *M. carruthersianae* Lehm. ex Krzl. et affinitatibus similis sed petalis basibus longidentatis et labello arcuato ab eis recedens.

Plant medium in size, epiphytic, caespitose; roots coarse, flexuous. Secondary stems channeled, 1-2 cm long, unifoliate, enclosed by 1-2 close, tubular sheaths. Leaf erect, coriaceous, narrowly elliptical, shortly petiolate, 7-10.5 cm long including the 1-2 cm long petiole, 12-18 mm wide, the subacute apex tridenticulate, the base cuneate into the channeled petiole. Inflorescence a congested, several-flowered (to 8) raceme of successive flowers borne at the apex of an erect, triquetrous peduncle, 26-27 cm long, subtended by a tubular bract, from the base of a secondary stem; floral bract tubular, 15-18 mm long; pedicel 18-20 mm long; ovary 5 mm long; dorsal sepal yellow, mottled with purple and shortly pubescent within, ovate, 9 mm long, 8 mm wide, connate to the lateral sepals for 3-4 mm in a revolute margin to form a shallow sepaline cup, the subacute apex produced into an erect, fili-

form, yellow-orange tail 5 cm long; lateral sepals maroon, ovate, oblique, 17 mm long, 17 mm wide together, connate for 7 mm forming an acute, deep mentum in front of the column-foot, the acute apices prolonged into recurved, filiform, yellow tails 3.5 cm long; petals white, elliptical, 4 mm long, 1.75 mm wide, the apex obtusely bidentate, with a broadly rounded laminate wing overlying the lower margin and extended into a long, narrow, deflexed tooth at the base; lip white, densely spotted with purple, ovate, arcuate, 5.5 mm long, 2.25 mm wide, narrowed above a pair of obtuse lateral folds at the middle, the apex obtuse, finely papillose, the base truncate, hinged beneath; column green, semiterete, 4 mm long, the foot equally long, with an incurved extension.

ETYMOLOGY: From the Greek *odon*, "tooth," and *petalum*, "petal," in reference to the toothed petals.

TYPE: *ECUADOR*: MORONA-SANTIAGO: epiphytic on the eastern slopes of the Andes near Chiquinda, alt. 1800 m, 1975, B. Malo s.n., cultivated near Cuenca, flowered in cult. 13 Feb. 1978, *C. Luer 2564* (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

Although superficially similar to *Masdevallia auropurpurea* Rchb. f. and to *M. carruthersiana* Lehm. ex Krzl. with which it is sympatric, this species is easily identified by the long-toothed process at the base of the petal, an unusual adaptation in the *Alaticaulis* section. In addition, the arcuate lip fits into a small but deep mentum.

Masdevallia ortalis Luer, sp. nov.

A *Masdevallia wagneriana* Lind. ex Lindl. & Paxt. foliis multimajoribus, margine inferiore petalorum cum dentibus duo et alis labelli obtusis supra medium acuminatis denticulatis dignoscenda.

Plant small, epiphytic, caespitose; roots fine, flexuous. Secondary stems terete, 1.5-2.5 cm long, blackish, unifoliate, clothed by 1-2 thin, tubular sheaths. Leaf erect, coriaceous, dark green, mottled with purple beneath, petiolate, elliptical, 3.5-7.5 cm long including the blackish petiole 1-1.5 cm long, 13-16 mm wide, the subacute apex tridenticulate, the base cuneate into the petiole. Inflorescence a solitary flower borne by an erect, slender peduncle ca. 4 cm long, with a basal bract, from low on the secondary stem; floral bract tubular 8-10 mm long; pedicel 13 mm long; ovary blackish, 5 mm long; dorsal sepal yellow marked with purple along the veins toward the base, transversely oblong, concave, 11 mm long, 14 mm wide, connate to the lateral sepals for 5-6 mm to form a shallow, gaping cup, the free portion broadly rounded, callously thickened at the apex, abruptly produced into an erect, yellow-green tail 25 mm long; lateral sepals colored similarly to the dorsal sepal, microscopically pubescent within above the middle, connate 8 mm into a transversely oblong lamina, 12 mm long, 21 mm wide, the broadly obtuse apices produced into 20 mm long, descending tails similar to that of the dorsal sepal; petals white marked with purple, oblong, 4 mm long, 1.5 mm wide, the truncate apex tridentate, the lower margin overlaid near the middle by an acute, retrorse, triangular tooth, and provided at the base by a smaller, narrower tooth; lip oscillating, yellow mottled with purple, more or less oblong, 3.75 mm long, 2 mm wide, with thin, broadly obtuse, lateral

wings, minutely denticulate below the middle, acuminate above the middle, the narrowed apical portion reflexed with a central callus, the base rounded and concave below with revolute margins, delicately hinged within to the column-foot; column thick, semiterete, yellow with red-purple flecks, the foot 2 mm long with a filamentous extension.

ETYMOLOGY: From the Greek *ortalis*, "a young bird, a chick," in fancied allusion to the resemblance of the flower to a hungry nestling.

TYPE: *ECUADOR*: without locality or collector, purchased by J & L Orchids and cultivated at Easton, Ct., flowered in cult. Nov. 1977, *C. Luer 2192* (HOLOTYPE: SEL).

DISTRIBUTION: Ecuador.

Vegetatively this species is the largest of the *Masdevallia wagneriana* alliance, the flowers being surpassed slightly in size by those of *M. rodolfoi* (Braas) Luer. The comparatively large leaves are diffusely marked with purple beneath. The flower is most similar to the much smaller *M. wagneriana* of Venezuela, but the details of the petals and lip readily distinguish it. The marginal callus of the petals of *M. ortalis* is developed into a deflexed, triangular tooth near the middle and a smaller one at the base. The wings of the lip are obtuse with an acuminate margin above the middle instead of broadly rounded and denticulate.

Masdevallia ova-avis Luer, sp. nov.

Habitu *M. polystictae* Rehb. f. et affinibus similis, sed racemo brevi contrato disticho horizontali, pedunculo longo, floribus aggregatis glabris nitidis griseis purpureo punctatis caulibus gracilibus aureis deflexis, sepalo dorsali cucullato, sepalis lateralibus oblongis basi connatis, petalis serrulatis apiculatis, et labello subpandurato obtuso differt.

Plant medium in size, but large for the section, terrestrial to epiphytic, caespitose; roots slender, flexuous. Secondary stems terete, 3-5 cm long, concealed by 2-3 brown, tubular sheaths, unifoliate. Leaf erect, coriaceous, elliptical-oblong, tridenticulate at the subacute apex, the base cuneate into a well-defined, sulcate petiole, 4-8 cm long, total length 15-21 cm, 3-4.5 cm wide. Inflorescence a compact, horizontal, distichous raceme 2-3 cm long, of 6-9 simultaneous, glabrous, shiny, pearly-gray flowers speckled with purple, with slender, deflexed, yellow-orange tails; peduncle slender, suberect, 15-23 cm long, from a node on the secondary stem; floral bract cucullate, acute, 5 mm long; pedicel 2.5 mm long; ovary 2.5 mm long with undulate wings; dorsal sepal united to the lateral sepals for 6 mm, ovate, cucullate, the apex rounded, abruptly caudate, the tail 14-16 mm long, the lamina 14 mm long, 10 mm wide; lateral sepals oblong, connate at the base to form a mentum below the column-foot, each narrowed at the apex into a tail 10-15 mm long, the lamina 11 mm long, 5 mm wide, with a yellow stripe down the purple center; petals dull white dotted with purple, elliptical-oblong, the margins serrulate, the apex obtuse with a short, acute apiculum, with a low, longitudinal lamella above the labellar margin, 5 mm long, 2.25 mm wide; lip oblong-subpanduriform, rounded at the apex, truncate at the base, lightly channeled centrally between thickened folds above the middle, orange-

brown dotted with purple, 5 mm long, 2.5 mm wide; column greenish white with purple flecks, semi-terete, 4 mm long, with a foot 3 mm long.

ETYMOLOGY: From the Latin *ova avis*, "eggs of a bird," in allusion to the appearance of the crowded inflorescence of speckled, ovoid flowers.

TYPE: *ECUADOR*: PICHINCHA: terrestrial and epiphytic along the new road between Quito and Santo Domingo, alt. 2000 m, 1974, B. Malo s.n., cultivated in Cuenca, flowered in cult., 20 July 1977, C. Luer 1753 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

This distinctive species of the *Polystictae* section is slightly larger than the orange-flowered *Masdevallia lehmannii* Rchb. f. to which it seems most closely related. Both species bear a congested, several-flowered raceme in a horizontal plane at the apex of a long, slender peduncle. Crowded more or less into a circle around the short rachis, the light bluish, ovoid sepaline cups speckled with purple resemble a clutch of bird eggs. The nest beneath is represented by the skirt of deflexed, orangish tails.

Masdevallia densiflora Schltr. from Colombia and some forms of *M. polysticta* have similarly densely flowered racemes.

Masdevallia pantex Luer, sp. nov.

Haec species *M. triaristellae* Rchb. f. et affinibus similis, sed floribus cum cupula sepalorum ampla, sepalis lateralibus supra medium convexis caudis brevibusque, et labello cum carinis dentatis differt.

Plant very small, epiphytic, caespitose; roots fine, flexuous. Secondary stems abbreviated, 2-3 mm long, concealed by a short, thin, ribbed sheath, unifoliate. Leaf thick, linear to very narrowly obovate, semiterete and channeled below, dark green, mottled with purple on the back, 2-3 cm long, 2-3 mm wide. Inflorescence a contracted, few-flowered raceme of successive flowers; peduncle lightly verrucose, erect or ascending from a node on the secondary stem, about 3 cm long; floral bract tubular, 2-3 mm long; pedicel 3-5 mm long; ovary lightly verrucose, 1.5 mm long; dorsal sepal connate to the synsepal for 3.5 mm to form a widely patent, saccate, sepaline cup, the dorsal sepal concave, transversely cuneate, 4 mm long, 6 mm wide, dark purple, the free margin yellow and minutely ciliate, broadly obtuse, abruptly produced into an erect, yellow tail 7 mm long, the lateral sepals purple, connate 7 mm into an oblong synsepal, deeply concave below the middle, convex above the middle, 9 mm long, 7 mm broad, the apex broadly rounded, produced abruptly into short, 3 mm long, yellow tails from the lateral margins about 3 mm from the middle of the synsepal; petals membranous, oblong, the apex more or less truncate, erose and apiculate, 3 mm long, 1 mm wide, translucent yellow with a purple spot; lip deep rose, ovate, 3 mm long, 1.5 mm wide, the apex narrowly obtuse, the base sagittate, cleft to accommodate the column-foot, the disc convex immediately before the junction with the column-foot, flanked by a pair of bluntly toothed carinae; column slender, greenish white suffused with pink, 3 mm long, with a laterally compressed foot 1.5 mm long.

ETYMOLOGY: From the Latin *pantex*, "a paunch," in allusion to the protruding, belly-like lateral sepals.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest at Yangana near Valladolid, alt. 2600 m, July 1975, W. Teague, L. Figueroa & D. Welisch s.n., cultivated by M. & O. Robledo at La Ceja, Colombia, flowered in cult. 27 Sept. 1977, *C. Luer 1854* (HOLOTYPE: SEL, ISOTYPE: JAUM).

DISTRIBUTION: Southern Ecuador.

Masdevallia pantex is one of the most distinctive members of the section *Triaristellae*. The sepals are broad, forming a wide, open cup with the concave synsepal protruding behind. Below the middle the synsepal bulges forward conspicuously, and two short tails are produced from the sides near the rounded apex. The low lamellae of the lip are provided with a few distinct teeth.

Masdevallia patriciana Luer, sp. nov.

Habitu *M. nidifica* Rchb. f. similis, sed statura minore, ovario non-crispato, flore polychromo, cupula sepalorum suborbiculari ventricosa, caudis sepalorum filiformibus, petalis tridenticulatis base cum dente prominenti, labello integro ligulato acuto differt.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 4-6 mm long, concealed by a loose, tubular sheath, unifoliate. Leaf erect, coriaceous, obovate, obtuse, tridenticulate, the base cuneate into a petiole 1-2 cm long, with the secondary stem becoming black with age, total length 2.5-3 cm, width 8-10 mm. Inflorescence a solitary, colorful flower produced on a filiform peduncle 1.5-2 cm long, from a node on the secondary stem; floral bract tubular, 4 mm long; pedicel 6 mm long; ovary green, 2.5 mm long; sepals connate for about 5 mm into a short, open, suborbicular cup, ventricose below, with widely spread, yellow, filiform tails up to 2 cm or more long, the dorsal sepal subquadrate, 6 mm long, 5 mm wide, carinate, the free portion transversely triangular, abruptly contracted into the tail, yellow-orange below the middle, purple and minutely glandular-pubescent above the middle, the lateral sepals subquadrate together, 7 mm long, 6 mm wide unspread, the ventricose portion white, the free portions transversely ovate, oblique, pink, contracted into tails similar to the dorsal sepal; petals translucent white, oblong, tridentate, the labellar margin thickened and produced at the base into a prominent, curved process, 4 mm long, 2 mm wide; lip dotted with purple on white, ligulate, tapering from the middle to the acute apex, the disc with a pair of low, indistinct calli, the base truncate, hinged beneath, 4.5 mm long, 2 mm wide; column terete, yellow-white, edged in purple, 4 mm long, with a 3 mm long, curved foot.

ETYMOLOGY: Named in honor of Sra. Patricia Cevallos de Malo of Cuenca, Ecuador.

TYPE: *ECUADOR*: MORONA-SANTIAGO: eastern slopes of the Andes, alt. 2300 m, 1974, B. Malo s.n., cultivated near Cuenca, flowered in cult. 15 July 1977, *C. Luer 1710* (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

This little species produces a single, very colorful flower on a peduncle about half as long as the small, obovate leaves. Dense clusters of the stems may amass numerous flowers simultaneously. The sepals are connate into a

rounded cup which is swollen beneath, orange toward the base and purple toward the opening above, the ventricosity white, and pink toward the opening below. The spreading, slender tails are bright yellow.

Masdevallia patula Luer & Malo, sp. nov.

Species haec *M. amaluzae* Luer & Malo affinis, sed planta grandiore, pedunculo longiore, flore multigrandiore longicaudatis, sepalis lateralibus in laminam latam convexam connatis et labello obovato obtuso distinguitur.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, 10-13 mm long, lightly channeled, enclosed by a thin, tubular sheath, unifoliate. Leaf erect, coriaceous, elliptical, petiolate, 5-9 cm long including the petiole, 10-16 mm wide, the apex acute, tridenticulate, the base cuneate into a channeled petiole 2-3.5 mm long. Inflorescence a few-flowered (1-3), contracted raceme of large, successive flowers borne by a slender, reclining or horizontal peduncle 10-15 cm long, with a bract below the middle, from a node low on the secondary stem; floral bract tubular, 6 mm long; pedicel 8 mm long; ovary 3.5-4 mm long, subverrucose, with low carinae; sepals yellowish with red-brown to red-purple stripes along the veins, subcarinate externally, the dorsal sepal obovate, connate to the lateral sepals for 7 mm into a short, cylindrical tube, the free portion narrowly triangular, 3-veined, acuminate into a slender tail, total length 60-71 cm, width 8 mm, the lateral sepals connate 25 mm into an oblong, convex, bifurcated, 6-veined lamina, cellular-glandular within, the free portions triangular, the acute apices acuminate into slender tails similar to that of the dorsal sepal, the total length 62-88 mm, 15-18 mm wide; petals translucent white with a purple stripe, subfalcate, the apex acute, 6 mm long, 1.5 mm wide, with thickenings along both margins, that along the lower margin ending in an obtuse swelling below the middle; lip rose-red, obovate, 7.5 mm long, 4 mm wide, obtuse at the apex, the base thickened with rounded margins, lightly retuse, hinged beneath, the disc with a low pair of irregular carinae; column stout, green edged in purple, 4 mm long, with a foot equally long, with an incurved extension.

ETYMOLOGY: From the Latin *patulus*, "outspread," in reference to the large, wide-spread synsepal.

TYPE: *ECUADOR*: MORONA-SANTIAGO: epiphytic in cloud forest of the Cordillera Oriental, alt. 2200 m, April 1975, B. Malo s.n., cultivated near Cuenca, flowered in cult., 9 July 1977, C. Luer 1656 (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

This species is closely related to the much smaller *Masdevallia amaluzae* Luer & Malo and *M. carmenensis* Luer & Malo. The three form a small, local alliance. The huge flower of *M. patula* seems too large for the plant, only a few flowers produced successively at the end of a long, weak peduncle. The sepals, prominently veined in red-brown, are united into a short, cylindrical tube. The long, filamentous tail of the dorsal sepal arches forward. The lateral sepals are connate into a conspicuous, broad, convex lamina which bifurcates into the long, filiform tails. The thick-based lip is obovate and obtuse.

Masdevallia persicina Luer, stat. et nom. nov.

Masdevallia wagneriana Lind. ex Lindl. & Paxt. var. *ecuadorensis* Braas, Orquideologia 12:30. 1977.

A *Masdevallia wagneriana* Lind. ex Lindl. & Paxt. cupula sepalorum profunde cylindrica caudis strictis retroflexis, petalis cum dente longo angosto deflexo et labello sigmoideo sine alis dignoscenda.

Plant small, epiphytic, caespitose; roots fine, flexuous. Secondary stems abbreviated, 5-10 mm long, blackish, unifoliate, enclosed by 1-2 thin, white sheaths. Leaf erect, dark green, coriaceous, petiolate, broadly elliptical, 2-4 cm long including the petiole 0.5-1.5 mm long, 12-20 mm wide, the subacute to obtuse apex tridenticulate, the base cuneate into the petiole. Inflorescence a solitary flower borne by a suberect, slender peduncle 3-3.5 cm long, with a bract at the base, from a node low on the secondary stem; floral bract tubular, 5-7 mm long; pedicel 10-11 mm long; ovary 6 mm long; dorsal sepal yellow, dotted with red along the midvein, obovate, 8.5 mm long, 8 mm wide, connate 6 mm to the lateral sepals to form a deep, cylindrical tube, the free portion broadly rounded, abruptly produced into a sharply retroflexed, slender, straight, yellow-green tail with an orangish apex, 33-35 mm long; lateral sepals yellow suffused with pink, microscopically pubescent within, connate 10 mm into a transversely obovate lamina, 12 mm long, 18 mm wide together, the broadly obtuse apices produced into deflexed tails similar to that of the dorsal sepal; petals yellow, oblong, 5 mm long, 1.3 mm wide, the truncate apex indistinctly denticulate, the lower margin thickened with a slender, acute, deflexed tooth from the lower third; lip oscillating, yellowish white with purple dots, oblong, sigmoid in profile, 6 mm long, 1.5 mm wide, narrowed toward the reflexed, narrowly obtuse, purple apex, the base rounded, flexibly hinged beneath to the column-foot, the margins decurved with minute, vestigial wings near the middle; column semiterete, white marked with red-purple, 5 mm long, the foot short with an incurved extension.

ETYMOLOGY: From the Latin *persicinus*, "peach-colored," in reference to the yellow flowers suffused with pink that imparts the color of a peach.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest between Loja and Zamora ca. 1600 m, June 1974, W. Teague s.n., *R. Escobar 1479* (HOLOTYPE: JAUM), cultivated at La Ceja, Colombia, by M. & O. Robledo, flowered in cult. 20 Jan. 1978, *C. Luer 2286* (CLONOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

ADDITIONAL MATERIAL EXAMINED: Same area and collector, cultivated in Cuenca by A. Andreetta, flowered in cult. 16 Feb. 1978, *C. Luer 2595* (SEL).

The existence of this pretty little species has been known to C. H. Dodson since his early travels on foot and mule-back to Zamora in the Oriente of southern Ecuador. He found it along with *Masdevallia strobilii* Sweet & Garay, and material of both species was forwarded to the Oakes Ames Herbarium at Harvard. Recent collections by Walter Teague have again brought this species into cultivation.

Masdevallia persicina, closely related to *M. wagneriana* and its allies, may be distinguished by the peach-colored, deep sepaline tube with acutely

reflexed, straight tails. The oblong petal is furnished with a slender, deflexed tooth on the lower third. The lateral wings of the lip, so prominently developed in the other known species of the alliance, are reduced to mere vestigial nubbins.

Masdevallia phoenix Luer, sp. nov.

Inter species sectionis *Alaticaulium* Krzl. sepalis intense maculatis, sepalis lateralibus late expansis intus carinatis, caudis omnium angustis subparallelis, callo basali petali rotundato, labello oblongo maculato marginibus supra medium apiceque denticulatis recurvatis distinguitur.

Plant medium in size, presumably epiphytic, caespitose; roots coarse, flexuous. Secondary stems abbreviated, 1-2.5 cm long, enclosed by 1-2 short, tubular sheaths, unifoliate. Leaf erect, coriaceous, narrowly elliptical, 8-15 cm long, 18-25 mm wide, the subacute apex tridenticulate, the base narrowed gradually into a channeled petiole 2-4 cm long. Inflorescence a congested raceme of several (6-9), successive flowers at the apex of an erect, sharply 3-angled peduncle, 17-32 cm long, with a basal bract, from near the base of a secondary stem; floral bracts conduplicate, imbricating, thin, 10 mm long, enclosing the pedicels about 5 mm long; ovary shiny green, 5 mm long; sepals dull greenish rose, heavily spotted with dark purple, the dorsal sepal obovate, connate 9 mm to the lateral sepals to form a spreading, subconical cup, the free portion triangular, the acute apex acuminate into a narrow tail directed forward over those of the lateral sepals, the total length 63 mm, width 12 mm, the lateral sepals ovate, oblique, connate about 20 mm to form a broadly expanded lamina 22 mm wide, with a narrow mentum, each lateral sepal with 3 smooth lamellae which become verrucose toward the acuminate, caudate apices, the tails directed forward with the tail of the dorsal sepal, total length of the lateral sepals 62 mm; petals greenish white marked with purple, oblong, 8 mm long, 2 mm wide, apiculate at the rounded apex, with a thickening along the lower margin ending at the base in a spherical callus; lip greenish white spotted with dark purple, oblong, 9 mm long, 5 mm wide, the margins above the middle erose and revolute, the apex subacute, denticulate-lacerate, recurved, with a small, central callus, the base truncate, hinged below; column green, semiterete, 7 mm long, the foot spotted with purple, 6 mm long with a short, incurved extension.

ETYMOLOGY: Named for the ancient legendary, purple-red, long-lived bird-monster.

TYPE: PERU: HUANUCO: obtained by J & L Orchids from R. Stumpfle s.n., cultivated in Easton, Conn., flowered in cult. 7 Nov. 1977, *C. Luer 2119* (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

Although vegetatively very similar to many other species of the winged-peduncle (*Alaticaulum*) section, the flower of *Masdevallia phoenix* is very distinctive, resembling the purple-spotted head of a bird. Like a narrow bill, the tails of the three sepals are directed forward together. The bases of the lateral sepals flare as they emerge from the broad, conical, sepaline cup, contrasting with the dorsal sepal that immediately attenuates above. The base of

the petal is furnished with a spherical callus, and the margins above the middle of the lip are recurved and denticulate.

Masdevallia picta Luer, sp. nov.

Planta mediocris caespitosis, caulibus secundariis gracilibus longis, foliis coriaceis ellipticis petiolatis, flore solitario picto, pedunculo folio subaequilongo, cupula sepalorum brevi, sepalis niveis roseo laete suffusis caudis aurantiacis, petalis oblongis truncatis callo marginali cum dente basali, labello subpandurato bicalloso apice rotundato notabilis.

Plant small to medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, 3-7.5 cm long, enclosed by a loose tubular sheath from below the middle and another 1-2 short sheaths at the base, unifoliate. Leaf erect, coriaceous, elliptical, petiolate, 7-11.5 cm long including the petiole, 15-22 mm wide, the subacute apex tridenticulate, the base cuneate into a channeled petiole 2-3.5 cm long. Inflorescence a single-flowered, erect, slender peduncle (occasionally 2) 5-10 cm long, with a bract near the base, from a node high on the secondary stem; floral bract tubular, 9 mm long; pedicel 12-16 mm long; ovary 5 mm long; flower gaping, colorful; dorsal sepal white, suffused with orange toward the base, suffused with bright rose on either side of the carinate midvein, obovate, connate to the lateral sepals for 7 mm into a short, cylindrical tube, the free portion triangular, the acute apex acuminate into a slender, bright orange tail 2.5-3.5 cm long, the total length of the dorsal sepal 33-45 mm, width 5 mm, the lateral sepals white above the middle, bright purple below the middle, very narrowly ovate, connate 8 mm creating a shallow mentum, the free portions gradually acuminate into slender, orange tails similar to that of the dorsal sepal, total length 30-45 mm, 10 mm wide together; petals white, marked with purple along the callus, oblong, 4.5 mm long, 1.8 mm wide, the apex truncate, shallowly tridentate, with a thick callus along the lower margin ending in a short, free tooth at the base; lip white, minutely speckled with purple, oblong-subpandurate, 5 mm long, 2 mm wide, the apex rounded, the base truncate, retuse, hinged beneath, the disc with a low pair of longitudinal calli down the middle; column white, marked with purple, semiterete, 4 mm long, with a short foot and an incurved extension.

ETYMOLOGY: From the Latin *pictus*, "painted, colored," in reference to the colorful flowers.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: cloud forest east of Loja, alt. 2800 m, Sept. 1972, B. Malo 30, cultivated near Cuenca, flowered in cult. 13 July 1977, C. Luer 1694 (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

The colorful flowers of this species are borne singly on slender, elongated peduncles to about as high as the leaves. The cylindrical sepaline tube is orange at the very base, then suffused with bright purple fading to white as the sepals part and spread with long, slender, bright orange tails. The callus of the oblong, truncate petal ends in a short tooth at the base, and the small, purple-dotted lip is lightly pandurate with a rounded apex.

Masdevallia pinocchio Luer & Andreetta, sp. nov.

Ab speciebus sectionis *Alaticaulium* Krzl. dignoscenda floribus aureis, cupula sepalorum subnulla, mento sepalorum lateralium grandi caulibus brevibus et labello marronino oblongo base deflexo oscillanti.

Plant medium in size, epiphytic, caespitose; roots coarse, flexuous. Secondary stems channeled, ca. 1 cm long, unifoliate, with 2 broad, loose sheaths. Leaf erect, light green, thickly coriaceous, petiolate, elliptical, 7-12 cm long including the petiole 2-4 cm long, 19-23 mm wide, the subacute apex tridenticulate, the base cuneate into the petiole. Inflorescence a several-flowered (to 9), congested raceme of successive, widely spread, yellow-orange flowers borne at the summit of an erect, sharply triquetrous peduncle, 16-21 cm long, subtended by a tubular bract, from the base of the secondary stem; floral bract white, papery, 1 cm long; pedicel 2-2.5 cm long; ovary yellow, 6-8 mm long; dorsal sepal bright yellow-orange, minutely subverrucose, narrowly triangular, the apex thick, long-acuminate, acute, 27 mm long, 9 mm wide, connate to the lateral sepals for 3 mm, at recurved margins not forming a sepaline cup; lateral sepals orange suffused with brown, minutely subverrucose, connate 12 mm into an ovate, bifid synsepal forming a deep, laterally compressed, conical mentum, the free portions, narrowly triangular, acuminate, acute, the total length 20 mm, 15 mm wide together; petals yellow, ovate-oblong, oblique, 6 mm long, 3 mm wide, the apex truncate, obscurely 3-lobed or shortly apiculate, dilated below the middle with a subacute angle at the base of the lower margin, with a thick, flat callus above the middle and a smooth, ovoid callus near the base above the lower margin; lip conspicuous, oscillating, maroon, oblong, 8 mm long, 3.25 mm wide, the margins above the middle deflexed, sinuate, the apex acute, decurved, the base thick, acutely recurved, flexibly hinged to the column-foot; column semiterete, yellow-white, 7 mm long, with a forwardly angled foot.

ETYMOLOGY: Named for Pinocchio, the long-nosed, wooden puppet that wanted to be a little boy, a character created by nineteenth century Carlo Lorenzini.

TYPE: ECUADOR: NAPO: epiphytic in Quijos Valley near Rio Solada, alt. ca. 1500 m, Jan. 1976, A. Andreetta & A. Hirtz 20, cultivated in Cuenca, flowered in cult. 5 Feb. 1978, C. Luer 2461 (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

This species, vegetatively similar to many others of the *Alaticaulium* section, bears a succession of unique flowers at the apex of the sharply three-angled peduncle. The first two flowers of a peduncle are the largest and usually produced simultaneously. A large mentum protrudes behind the yellow-orange flower that gapes widely to expose fully the column, petals and lip. The most conspicuous, maroon lip is delicately balanced on the forwardly angled column-foot so that it gently wobbles from the slightest disturbance. The oscillating lip is reminiscent of that of *Masdevallia wagneriana* Lind. ex Lindl. & Paxt.

Masdevallia polyphemus Luer, sp. nov.

Species haec *Masdevalliae wallisii* Rchb. f. persimilis sed epichilio labelli transverse trapeziformi concavo marginibus non-incurvatis distinguitur.

Plant large, epiphytic, caespitose; roots coarse, flexuous. Secondary stems channeled, 3-6 cm long, unifoliate, clothed by 2-3 loose, tubular sheaths. Leaf erect, light green, thinly coriaceous, plicate, carinate along the dorsal vein, elliptical, 12-25 cm long, 3-5 cm wide, the apex acute, tridenticulate, gradually narrowed to the conduplicate base. Inflorescence a few-flowered raceme of successive, large, widespread flowers borne by a more or less horizontal, purplish peduncle 10-12 cm long, with distant bracts, from the base of the secondary stem; floral bract tubular, 15 mm long; pedicel 21 mm long; ovary dark green, subverrucose, 7 mm long; sepals densely spotted with brownish maroon on pinkish buff, the spots confluent toward the apices and margins, greenish white centrally, covered within by a short, dense pubescence; dorsal sepal more or less flat, ovate, connate to the lateral sepals for 10 mm, the acute apex acuminate into a straight, filiform, maroon tail, the total length 105 mm, the width 22 mm; lateral sepals broadly ovate, connate 18 mm to form a broad, shallow mentum, the acute apices produced into diverging tails similar to that of the dorsal sepal, the total length 105 mm, each 25 mm wide; petals ivory, marked with brown, obovate-spatulate, 6.5 mm long, 3 mm wide, the apex bivalved, papillose between the laminae, the inner lamina shorter, subacute, verrucose, the outer lamina rounded; lip white, spatulate, 13 mm long, 12 mm wide, the hypochile oblong, 5 mm long, 4 mm wide, with erect, obtuse, marginal angles, cleft between, the base concave, flexibly hinged to the column-foot, the epichile transversely trapeziform, 10 mm long, 12 mm wide, concave with the sides more or less erect, not incurved, with multiple, elevated, radiating veins within; column stout, greenish white, 6 mm long, with a foot 4 mm long.

ETYMOLOGY: Named for the Cyclops of Greek mythology who imprisoned Odysseus in a cave and ate some of his companions.

TYPE: *ECUADOR*: PICHINCHA: epiphytic in cloud forest along the old road between Quito and Santo Domingo, above Chiriboga, alt. ca. 2000 m, 1975, B. Malo s.n., cultivated near Cuenca, flowered in cult. 13 Feb. 1978, C. Luer 2565 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

This species appears very similar to the Colombian *Masdevallia wallisii* Rchb. f., but it is distinguished from the latter by the shape of the epichile of the lip. Like that of *M. wallisii*, the lip of *M. polyphemus* is flexibly hinged to the column-foot, but the epichile is trapeziform in outline, or possibly it could be considered to be broadly triangular, depending upon the interpretation of the broadly obtuse or rounded apical margin. The broad lateral angles of the margin curve upward without curving in. The concavity is filled with radiating lamellae.

Masdevallia psyche Luer & Andreetta, sp. nov.

Species haec a speciebus ceteris sectionis *Saccilabiatae* Rchb. f. foliis anguste linearibus, floribus campanulatis parvis eburneis purpureo vittatis, pilis albis apicibus purpureis et epichilio labelli suborbiculari marginibus involutis distinguenda.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems channeled, 2-4 cm long, unifoliate, clothed by 2-3 loose,

tubular sheaths. Leaf light green, erect, coriaceous, very narrowly elliptical to linear, 9-19 cm long, 8-15 mm wide, dorsally carinate along the midvein, the acute apex tridenticulate, gradually narrowed to the conduplicate base. Inflorescence a congested, few-flowered (to 3) raceme of successive flowers borne by a slender, purplish, sparsely bracted, ascending to descending peduncle 7-15 cm long, from the base of a secondary stem; floral bract tubular, 7-8 mm long; pedicel 8-10 mm long; ovary brown, subverrucose, 3 mm long; sepals light yellow to white, edged in purple-brown with radiating veins of pink to purple from the bases to the margins, glabrous externally, with white pubescent hairs tipped in purple internally, the dorsal sepal transversely ovate, 8 mm long, 11 mm wide, connate 5 mm to the lateral sepals to form a campanulate sepaline cup, the obtuse apex produced into a forwardly directed, filiform, maroon tail 35-37 mm long, the lateral sepals connate 8 mm into a concave, broadly "U-shaped" synsepal, each lateral sepal oblong, oblique, 13 mm long, 8 mm wide, the acute, acuminate apices approximate with closely parallel, straight tails similar to that of the dorsal sepal; petals light green, oblong, 2.5 mm long, 1 mm wide, the apex bivalved, slightly scarious between the laminae, the inner lamina acute, the outer lamina subacute; lip white suffused with orangish pink, spatulate, 5 mm long, 3.5 mm wide, the hypochile 3 mm long, 2.25 mm wide, with obtuse marginal angles, channeled centrally, the base concave, hinged to the column-foot, the epichile subspherical, 3 mm long, 3.5 mm wide, deeply concave with involute margins, with 5 elevated, radiating veins within; column stout, bright yellow, 3.25 mm long, with an equally long, stout foot.

ETYMOLOGY: Named for Psyche, the Greek mythological winged fairy, the personification of the soul, loved by Eros. Literally *psyche*, "breath" or "butterfly."

TYPE: *ECUADOR*: CARCHI: epiphytic in cloud forest above Maldonado, alt. ca. 2000 m, Oct. 1975, A. Andreetta & A. Hirtz 35, cultivated in Cuenca, flowered in cult. 4 Feb. 1978, C. Luer 2463 (HOLOTYPE: SEL), same area 21 Feb 1978, C. Luer, J. Luer & A. Hirtz 2686 (SEL).

DISTRIBUTION: Northwestern Ecuador.

This pretty little species is apparently endemic in the Occidente of Carchi in northern Ecuador. The slender leaves are similar to those of some of the other small-leaved species of the section. The peduncles, either ascending or descending, bear distinctive flowers. The sepals are united into a fairly well-developed cup, striped with light to darker purple toward the margins where the lines coalesce. Opposite the slender tail of the dorsal sepal, the pair of closely parallel tails of the lateral sepals point downward. The epichile of the lip is suborbicular, hollow and lined with several radiating lamellae.

Masdevallia pyxis Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis semiteretibus unifoliatis, foliis crassis anguste obovatis petiolatis, pedunculo brevi gracili purpureo guttato, bractea floris inflata punctata, sepalo dorsali flavovirenti oblongo cum synsepalo purpureo profunde cymbiformi duplo longiore in tubo cylindrico connato, cauda superna quam lamina aequilonga,

caudis inferis brevissimis, petalis oblongis truncatis, labello purpureo guttato oblongo supra medium dilatato apice rotundato callo verrucoso.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, semiterete, spotted with purple, 3-5 cm long, unifoliate, enclosed by 2-3 gray, loose, tubular sheaths. Leaf erect, thickly coriaceous, narrowly obovate, petiolate, 9-16 cm long including the 3-5 cm long petiole, 16-27 mm wide, the apex subacute to obtuse, tridenticulate, the base gradually narrowed into the channeled petiole. Inflorescence a solitary flower borne by a slender, erect peduncle intensely dotted with purple, 4.5-5 cm long, with a basal bract, from low on the secondary stem; floral bract white, loose, speckled with purple, 10 mm long; pedicel dotted with purple, 15 mm long; ovary green, angled with the pedicel, 5 mm long; dorsal sepal yellow-green, dotted with red externally along the midvein, oblong, connate 10 mm with the synsepal into a cylindrical tube, the free part broadly triangular, the obtuse apex contracted into a yellow, terete tail ca. 10 mm long, the total length 21 mm, the width 7 mm; lateral sepals dark red-purple, connate 20 mm into a broadly elliptical, deeply cymbiform, obtuse lamina, 15 mm across spread out, the apices produced into short, 3 mm long, green, forwardly directed tails, the total length 24 mm; petals white, oblong, 6.5 mm long, 2 mm wide, the truncate apex obscurely bilobed, both upper and lower halves thickened, the lower more than the upper; lip ivory spotted with red-purple, narrowly oblong, dilated above the middle, 7 mm long, 2.5 mm wide, the apex rounded, with a verrucose callus, the base retuse, hinged beneath, the disc with a pair of angled lamellae near the middle; column white, stout, semiterete, 6 mm long, the foot 3 mm long, with a short, incurved extension.

ETYMOLOGY: From the Latin *pyxis*, "a small box," in allusion to the appearance of the flower.

TYPE: PERU: HUANUCO: near Tingo Maria, March 1975, Janet Kuhn s.n., cultivated at La Ceja, Colombia, by M. & O. Robledo, flowered in cult. 21 Jan. 1978, *C. Luer* 2295 (HOLOTYPE: SEL, ISOTYPE: JAUM).

DISTRIBUTION: Peru.

Although vegetatively very similar to many other species of *Masdevallia*, the solitary flower of *M. pyxis*, borne by a short, terete peduncle, is very distinct. Practically the entire length of the short-tailed dorsal sepal is connate to the united lateral sepals to form a box-like sepaline tube. The sides of the box are formed by the twice larger, concave synsepal which terminates in a very short pair of thick tails.

Masdevallia rodolfoi (Brass) Luer, stat. et comb. nov.

Masdevallia wagneriana Lind. ex Lindl. & Paxt. var. *rodolfoi* Braas, *Orquideologia* 12:23. 1977.

A *Masdevallia wagneriana* Lind. ex Lindl. & Paxt. cupula sepalorum late patenti sepalis crassis majoribus caudis proportione brevioribus, petalis cum dente acuto prope medium et alis labelli integris dignoscenda.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems terete, blackish, 10-12 mm long, unifoliate, enclosed by 1-2 thin, tubular sheaths. Leaf erect, coriaceous, dark green, petiolate, broadly elliptical, 3-

7 cm long including the 1-2.5 cm long petiole, 15-24 mm wide, the obtuse apex tridenticulate, the base cuneate into the blackish petiole. Inflorescence a solitary flower borne by a suberect, slender peduncle 1.5-2.5 cm long, with a basal bract, from a node low on the secondary stem; floral bract tubular, 7 mm long; pedicel 11 mm long; ovary green, 7 mm long; dorsal sepal yellow, diffusely studded within with red, glandular cells, marked with red along the veins toward the base, transversely obovate-oblong, concave, carinate within along the veins, 12 mm long, 15 mm wide, connate to the lateral sepals for 6 mm into a widely spread, shallow cup, the free portion broadly rounded, the truncate apex transversely thickened, abruptly produced into a reflexed, thick, green tail 15 mm long; lateral sepals colored similarly to the dorsal sepal, connate 9 mm into a transversely oblong lamina, 13 mm long, 24 mm wide, the obtuse apices produced into 9 mm long, reflexed tails; petals yellow marked with purple, oblong, 4 mm long, 1.5 mm wide, the obtuse apex retuse, the labellar margin thickened with a subacute, retrorse, triangular process near the middle; lip oscillating, yellow marked with purple, oblong-3-lobed, 3.5 mm long, 2 mm wide, the lateral lobes or wings rounded, narrowed toward the recurved, narrowly obtuse apex with a central callus, the base rounded and concave below with revolute margins, delicately hinged within to the column-foot; column thick, semiterete, cream-colored, flecked with red, 4 mm long, the thick foot 3 mm long, with a filamentous extension.

ETYMOLOGY: Named in honor of Sr. Rodolfo Stumpfle of Lima, Peru, who discovered this species.

TYPE: PERU: JUNIN: San Ramon y La Merced near Chanchamayo, alt. 2000 m, June 1971, R. Stumpfle 671-1, *R. Escobar 1638* (HOLOTYPE: JAUM), cultivated at La Ceja, Colombia, by M. & O. Robledo, flowered in cult. 5 Oct. 1977, *C. Luer 1907* (CLONOTYPE: SEL).

DISTRIBUTION: Peru.

Masdevallia rodolfoi is the largest-flowered species of the *M. wagneriana* alliance. The fleshy, broad sepals are widely spread. The dorsal sepal is concave with the veins standing as three, erect lamellae between the thickened margins. The short, thick tails are retroflexed. The petals are provided with a single, acute, retrorse tooth near the middle of the lower margin. The comparatively small lip is most similar to the farthest known member of the alliance, *M. wagneriana* Lind. ex Lindl. & Paxt., but the wings of the lip of *M. rodolfoi* are entire.

Masdevallia sanctae-inesae Luer & Malo, sp. nov.

Haec species *M. xanthinae* Rchb. f. et affinis similis, sed sepalis suborbicularibus pallide flavovirentibus cum area centrali synsepali aurantiaca, petalis oblongis apice tridentatis margine antico alato basi cum dente lato et labello subquadrato truncato distinguitur.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems short, 8-15 mm long, blackish, enclosed by 1-2 thin, tubular sheaths, unifoliate. Leaf erect, thin, coriaceous, elliptical, the apex subacute to obtuse, tridenticulate, the base cuneate into a petiole 2-3 cm long, the total length 6-14 cm, width 18-30 mm. Inflorescence a solitary flower borne on a

slender, suberect peduncle 2.5-3 cm long with a basal bract, from a node on the secondary stem; floral bract tubular, 6-8 mm long; pedicel 7-9 mm long; ovary green 5 mm long; dorsal sepal suborbicular, 15 mm long, 15 mm wide, united to the lateral sepals for 8 mm into a broad, shallow, sepaline cup, translucent greenish white with 5 green veins, the subtruncate apex abruptly produced into a greenish orange, filiform tail 32 mm long; lateral sepals suborbicular to broadly ovate, oblique, 12 mm long, 12 mm wide, connate for 8 mm, colored similarly to the dorsal sepal except for a large area of bright orange suffusion beneath the lip to the margin, the obtuse apices contracted into diverging tails similar to that of the dorsal sepal; petals greenish white, oblong, 6 mm long, 3 mm wide, the truncate apex tridentate, the labellar margin with a longitudinal, thickened wing ending in a broad, triangular tooth near the base, the base oblique; lip erect, yellow-green becoming orange toward the apex, subquadrate, 6 mm long, 5 mm wide, the broadly truncate apex margined in deep purple with a small, central callosity, the sides undulate, the base thickened with a pair of rounded calli in the middle, hinged beneath; column semiterete, greenish white marked with purple, 5 mm long, the foot ending in a narrow, incurved extension.

ETYMOLOGY: Named for the orchid finca Santa Ines of Benigno Malo near Tarqui south of Cuenca.

TYPE: ECUADOR: MORONA-SANTIAGO: epiphytic on the east slopes in the southern part of the province, alt. 2500 m, May 1973, B. Malo s.n., cultivated near Cuenca, flowered in cult. 11 July 1977, C. Luer 1686 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This species, similar to *Masdevallia xanthina* Rchb. f. and its numerous relatives, is readily distinguished by the rounded, pale greenish yellow sepals veined in green with a prominent orange suffusion covering the inner halves of the lateral sepals. Obscuring the column and petals, the erect lip stands in the center of the flower, the broad under-surface facing outward.

Masdevallia simia Luer, sp. nov.

Species haec *M. benedictii* Rchb. f. similis, sed epichilio labelli non-concavo longitudinale unicarinato cum lamellis brevibus radiantibus praecipue differt.

Plant medium-sized to large, epiphytic, caespitose; roots coarse, flexuous. Secondary stems channeled, 2-4 cm long, enclosed by 2 loose, tubular sheaths, unifoliate. Leaf erect, thin, coriaceous, very narrowly elliptical, 10-21 cm long, 13-17 mm wide, carinate dorsally, tridentate at the acute apex, the base gradually narrowed into a conduplicate base. Inflorescence a few-flowered, contracted raceme of successive, showy flowers, borne by a more or less horizontal, minimally verrucose peduncle about 10 cm long, from a node on the secondary stem; floral bract tubular, 10 mm long; pedicel 13 mm long; ovary brown, lightly verrucose, 8 mm long; sepals widespread, more or less flat, subcarinate and glabrous externally, covered within by short thick hairs or spicules, the outer halves of the sepals heavily suffused with red-purple, the inner halves white, the dorsal sepal broadly ovate, 20 mm long, 26 mm wide, connate to the lateral sepals 8-9 mm, the obtuse apex

contracted into a slender tail 7 cm long, the lateral sepals broadly ovate, oblique, 20 mm long, 24 mm wide, connate 13 mm to form a broad, shallow mentum, the obtuse apices contracted into tails similar to that of the dorsal sepal; petals thick, elliptical-oblong, 5 mm long, 2.5 mm wide, white marked with brown, bivalved at the rounded apex, papillose between the laminae, the inner lamina toothed and acute; lip spatulate, white, 12 mm long, 9 mm wide, the hypochile 5 mm long, 4 mm wide, cleft centrally, the sides erect, rounded, the base concave, hinged to the column-foot, the epichile broadly ovate, 7 mm long, 9 mm wide, not concave, but slightly curved up at the rounded apex, the disc with a longitudinal keel from the hypochile to the apex, with several lamellae radiating to the flattened, lightly sinuate margins; column stout, white, 5 mm long, with a foot 3 mm long.

ETYMOLOGY: From the Latin *simia*, "an ape or monkey," in fancied allusion to the appearance of the flower.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest between Loja and Zamora, alt. ca. 2000 m, B. Malo 25, cultivated by M. & O. Robledo at La Ceja, Colombia, *R. Escobar 1692*, flowered in cult. 25 Sept. 1977, *C. Luer 1836* (HOLOTYPE: SEL, ISOTYPE: JAUM).

DISTRIBUTION: Southeastern Ecuador.

This grotesque species may be distinguished from the closely related *Masdevallia benedictii* Rchb. f. by the ovate epichile of the lip which is provided with a prominent central keel with lesser lamellae radiating downward to a level, non-incurved margin. A distinct zone of white surrounds the column and petals in the otherwise minutely spiculate, deep red-purple sepals imparting the impression of a capuchin monkey.

Masdevallia tarantula Luer, sp. nov.

Masdevalliae nycterinae Rchb. f. affinis sed statura gradiore, ovario subverrucoso non cristato et sepalis longioribus mento grandissimo distinguitur.

Plant large, epiphytic, caespitose; roots coarse, flexuous. Secondary stems channeled, 3-4 cm long, unifoliate, enclosed by 1-2 close, tubular sheaths. Leaf erect, light green, thinly coriaceous, finely veined, carinate along the dorsal midvein, elliptical, 15-20 cm long, 2.5-3.5 cm wide, the subacute apex tridenticulate, the base cuneate into an indistinct, conduplicate petiole. Inflorescence a successively few-flowered (to 6) raceme of large, showy flowers borne by an ascending or suberect, scabrous peduncle 11-15 cm long, with a few, widely spaced bracts, from low on the secondary stem, floral bract tubular, 10 mm long; pedicel 15 mm long; ovary greenish brown, subverrucose, 7 mm long; sepals spotted with dark red-brown on an ivory base, the spots confluent toward the apices and margins, with a dense, yellow pubescence within, the dorsal sepal more or less flat, narrowly ovate, connate to the lateral sepals for 9 mm, the acute apex acuminate into a red-brown, filiform tail, somewhat flexuous toward the apex, the total length 105 mm, 22 mm wide, the lateral sepals ovate, oblique, connate 23 mm to form a broad, deep mentum, the acute apices acuminate into more or less parallel tails similar to that of the dorsal sepal, the total length 100 mm, each 24 mm wide; petals ivory, marked with brown, obovate, 4 mm long, 2.5 mm

wide, the apex bivalved, papillose between the laminae, the inner lamina acute, verrucose, the outer lamina rounded; lip white, spatulate, 10 mm long, 11 mm wide, the hypochile oblong, 5.5 mm long, 3.5 mm wide, with erect, obtuse, marginal angles, cleft between, the base concave, flexibly hinged to the column-foot, the epichile transversely elliptical, 6 mm long, 11 mm wide, deeply concave, the sides incurved, with multiple, elevated, radiating veins within; column stout, yellowish white, 4 mm long, with an equally long foot.

ETYMOLOGY: Named for the similarity of the flower to a tarantula, a genus of large, hairy spiders.

TYPE: *ECUADOR*: PICHINCHA: epiphytic in cloud forest above Chiriboga, alt. ca. 2000 m, along the old road between Quito and Santo Domingo, 1975, B. Malo s.n., cultivated near Cuenca, flowered in cult. 4 Feb. 1978, C. Luer 2454 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

This species resembles a large form of *Masdevallia nycterina* Rchb. f. The ovary of *M. tarantula* is merely subverrucose compared to the six denticulate wings on the ovary of *M. nycterina*. The sepals of the former are larger, longer, and more gradually attenuate with more intense spotting. The deep mentum formed by the lateral sepals is conspicuous. The tails are similarly very slender and gently flexuous above the middle. Except for their larger size, the petals and lip are not remarkably different.

This species also resembles *M. polyphemus* Luer with which it is known to be sympatric. *Masdevallia tarantula* differs from the latter by the longer sepals with flexuous tails, the tails of the lateral sepals parallel instead of spreading, and the sides of the transversely elliptical epichile of the lip are incurved.

Masdevallia tarantula seems to be intermediate between *M. nycterina* and *M. polyphemus*, and could possibly represent a natural hybrid between the two.

Masdevallia vampira Luer, sp. nov.

Haec species *M. chimaerae* Rchb. f. et affinis similis, sed floribus glabris, sepalis plus minusve complanatis vel leviter concavis viridibus subtiliter intenseque atropurpureo vittatis longicaudatisque, petalis bivalvibus et labello flexibili grandi epichilio ovoideo concavo multinervato distinguitur.

Plant large, epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, channeled, 4-6 cm long, unifoliate, sheathed by 1-2 loose, dry sheaths which are often shredded or shed. Leaf erect, elliptical, 15-25 cm long, 4-5.5 cm wide, comparatively thin, sometimes indistinctly plicate, the apex subacute, tridenticulate, the base tapered into a short, ill-defined petiole. Inflorescence a successively several-flowered (5-7) raceme to 17 cm long, borne by a horizontal to descending peduncle, 20 to more than 40 cm long, from low on the secondary stem; floral bract oblique, acute, 12-25 mm long; pedicel 18-25 mm long; ovary verruculose, dark olive-green, 10 mm long; flowers widely spread, horizontally dependent; sepals glabrous, more or less flat or slightly concave, light green but the green largely obscured by multiple, thin, more or less parallel, longitudinal, blackish purple veins that converge toward the apices, the dorsal sepal ovate, 2.4-5.5 cm long, 2.2-4 cm

wide, connate to the lateral sepals for 1.5 cm, the subacute apex contracted into a straight, filiform, blackish tail 5-11 cm long, the lateral sepals ovate, oblique, connate in a broad, shallow mentum, to near the middle into a synsepal 3-6 cm long, 2.2-7 cm broad, the subacute apices contracted into tails similar to that of the dorsal sepal; petals white, marked with purple, thick, oblong, 6 mm long, 2 mm wide, the obtuse apex bivalved with a verrucose callus protruding from between the laminae; lip white with pinkish to yellowish veins, 15-24 mm long, 11-17 mm wide, the hypochile cleft with obtuse, erect, lateral angles and with denticulate carinae extending forward, loosely hinged to the column-foot, 7 mm long, 5 mm wide, the epichile ovoid, concave, the margins incurved, with multiple, branching, elevated, radiating veins within, 10-17 mm long, 11-17 mm wide; column yellow. stout, 7 mm long, with a thick foot nearly as long.

ETYMOLOGY: Named for the resemblance of the flowers to a bat; from old middle European *vampir*, and *Vampirus*, a genus of bats.

TYPE: *ECUADOR*: PICHINCHA: epiphytic in cloud forest along the old road between Quito and Santo Domingo, alt. ca. 2000 m, B. Malo s.n., cultivated near Cuenca, flowered in cult. 20 July 1977, C. Luer 1819 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: same area, Jan. 1973, A. Andreetta 6, cultivated in Cuenca, flowered in cult. 12 July 1977, C. Luer 1692 (SEL).

DISTRIBUTION: Western Ecuador.

This magnificent species, commonly known as the "black chimaera," has been in cultivation for about fifteen years. The leaves are often broad and more or less plicate. The long, horizontal or drooping peduncle bears a succession of immense flowers totally hairless and without warts. The broad, flat sepals are green, but this base color is not readily visible because it is overlaid by numerous, thin, purplish black veins that converge at the apices to convey a black appearance to the flower. The black tails are long and slender. The large, concave, multiveined epichile of the lip occupies the center of the flower. The lip is flexibly hinged to the column-foot, not rigidly fixed as in *M. chimaera*.

In common with many allied species, exposure for a few minutes to warm or dry air causes the flower to become limp. The sepals and tails promptly regain their rigidity and stand straight out on a 180° plane after return to a cool, moist atmosphere.

Masdevallia virgo-cuencae Luer & Andreetta, sp. nov.

Species haec *M. carruthersianae* Lehm. ex Krzl. et affinis cognata sed flore grandi pulcherrimo, sepalo dorsali aureo cauda gracili curvata, synsepalo roseo vittato late elliptico e cupula sepalorum deflexo caudis brevibus reflexis dignoscenda.

Plant medium in size, epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, 1-2.5 cm long, enclosed by 1-2 thin, deciduous sheaths, unifoliate. Leaf erect, light green, fleshy, coriaceous, elliptical, subpetiolate, 8-10 cm long, 20-28 mm wide, the apex subacute to obtuse, tridentate, the base cuneate into a short, indistinct, channeled petiole. Inflorescence a

several-flowered (5-9), congested raceme of successive, showy flowers atop an erect, triquetrous peduncle, 14-20 cm long, from a node low on a secondary stem; floral bracts imbricating, oblique, papery, 8-15 mm long; pedicel 17-18 mm long; ovary triate, 5 mm long; dorsal sepal yellow, minutely speckled with red within, narrowly elliptical, concave, connate 15 mm to the lateral sepals into a well-formed sepaline tube, the free portion narrowly triangular, lightly carinate, deflexed, then tapered into a slender, recurved tail, the total length 6.5 cm, 10 mm wide; lateral sepals light purple, darker purple in stripes along the nerves, glandular-cellular, connate ca. 3 cm into a broadly elliptical, convex, deflexed lamina, constricted above the narrowed, concave base, the apices acuminate into short, slender, recurved, green tails 1 cm long, the total length 5.5 cm, 2.5 cm wide; petals white, oblong, 7.5 mm long, 3 mm wide, the obtuse apex irregularly apiculate, with a low, smooth callus above the lower margin; lip white, flecked with purple, oblong-subpandurate, 6 mm long, 1.5-2 mm wide, the apical portion elliptical, subacute, denticulate, papillose, with a pair of folds near the middle, oblong below the middle, the base thickened, rounded, hinged below; column semiterete, white, edged in purple, 5.5 mm long, the foot 3 mm long with a curved, spotted extension.

ETYMOLOGY: From the Latin *virgo*, "maiden" and *Cuencae*, "of Cuenca," in reference to the area where the species was found.

TYPE: *ECUADOR*: AZUAY: epiphytic in a valley above Machangara near Cuenca, alt. 2700 m, Feb. 1977, A. Andreetta 3, cultivated at Cuenca, flowered in cult. 12 July 1977, C. Luer 1688 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This very showy species of the *Alaticaula* section is characterized by the large, colorful flower. A single plant of this very showy species was discovered in 1976 by Sra. Elizabeth Strobel of Cuenca, Ecuador. It was given to Padre Andreetta who was successful in finding one more plant in the same area. A recent search failed to produce another plant.

Large colorful flowers are borne successively atop a long, 3-angled peduncle. The dorsal sepal is gracefully curved above a broad, rose-striped synsepal that curves beneath with short tails that sometimes cross each other. The petals and lip are not remarkably distinct from its congeners.

Masdevallia vittata Luer, sp. nov.

M. triaristellae Rchb. f. et affinis similis, sed foliis latioribus, pedunculo nonverruculoso, sepalis vittatis, caudis sepalorum brevibus crassisque caudis sepalorum lateralium ex apicibus orientibus, et labello tricalloso differt.

Plant very small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 2-3 mm long, concealed by a short, thin, tubular sheath, unifoliate. Leaf erect, thickly coriaceous, narrowly elliptical to narrowly obovate, subacute, tridenticulate, speckled with purple beneath, 20-25 mm long, 5-7 mm wide. Inflorescence a congested, few-flowered (2 or more ?) raceme of successive flowers; peduncle glabrous, erect, filiform, from a node on the secondary stem, 3.5-4 cm long; floral bract tubular, 5 mm long; pedicel 5 mm long; ovary very lightly verrucose, 2 mm long; sepals

yellow, suffused and prominently striped with purple, connate to the synsepal for 3 mm, transversely cuneate, 3 mm long, 6 mm wide, the free margin broadly obtuse, minutely ciliated, abruptly produced into a thick, curved, yellow tail 6 mm long, the lateral sepals connate for 5 mm into a broad, concave synsepal, 7 mm broad, the free portions triangular, about 4 mm long, tapered at the apices into thick, 3-4 mm long, yellow, diverging tails, each lateral sepal about 8 mm long exclusive of the tail, 3.5 mm wide; petals oblong, slightly dilated near the middle, 3.25 mm long, 1 mm wide, the apex truncate, minutely tridenticulate, translucent white with a broad purple stripe; lip red-purple, oblong-ovate, 3.5 mm long, 1.25 mm wide, the apex rounded, the base sagittate, the disc traversed by 3 parallel, longitudinal calli; column red, cylindrical, 3 mm long, with a foot 1.5 mm long.

ETYMOLOGY: From the Latin *vittatus*, "longitudinally striped," in reference to the prominently striped sepals.

TYPE *ECUADOR*: AZUAY: western slopes of the Andes, alt. 1900 m, August 1974, B. Malo s.n., cultivated by him near Cuenca, flowered in cult. 20 July 1977, *C. Luer 1756* (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This little species is easily distinguished from the other members of the section by the comparatively broad leaves, the glabrous peduncle, the purple-striped sepals connate into a broadly patent sepaline cup and terminated at the apices by short, thick, diverging tails, and the narrowly ovate lip lined by three low calli.

Masdevallia whiteana Luer, sp. nov.

Planta mediocris caespitosa, caulibus secundariis crassis abbreviatis unifoliatis, foliis coriaceis erectis anguste obovatis sensim petiolatis, pedunculo triquetro erecto folio paulo longiore, racemo paucifloro contracto, floribus successivis carnosus marrononis caudis luteis sepalis brevioribus, cupula sepalorum subquadrata gibbosa, petalis albis oblongis callo longitudinali, labello roseo punctato subpanduriformi obtuso.

Plant medium in size, presumably epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, abbreviated, 1-1.5 cm long, unifoliate, with 2-3 short, loose, papery sheaths. Leaf erect, fleshy, coriaceous, narrowly obovate, obtuse, the base gradually narrowed into a channeled petiole, 11-15 cm long, 18-22 mm wide. Inflorescence a succession of single flowers in a contracted raceme at the apex of an erect, sharply 3-angled peduncle, 18-26 cm long from near the base of a secondary stem; floral bract papery, 5-10 mm long; pedicel about 10 mm long; ovary green, 5 mm long; sepals rigid, fleshy, dark purple or maroon, orange toward the base, with yellow tails about 1 cm long, the dorsal sepal united to the lateral sepals for 10 mm, obovate, the apex abruptly acuminate into the tail, total length 30-34 mm, 10 mm wide, the lateral sepals connate to the bases of the close, diverging tails into a deeply concave, elliptical synsepal with a distinct mentum, total length 28-32 mm, 18 mm wide spread out; petals white, oblong, rounded and retuse at the apex, with a low, longitudinal callus along the labellar margin, 7 mm long, 2 mm wide; lip subpanduriform, white, dotted with

pink, the apex obtuse, the base truncate and hinged beneath, the disc with a pair of low folds near the middle, 7 mm long, 3 mm wide; column terete, 6 mm long, white suffused with pink, with a short foot.

ETYMOLOGY: Named in honor of Dr. William E. White of Anniston, Alabama, who submitted the plant to the Orchid Identification Center of the American Orchid Society at the Marie Selby Botanical Gardens.

TYPE: *PERU*: without locality, cultivated by W. E. White 739, OIC-1177, flowered repeatedly in cult., *C. Luer 1608A* (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

This freely flowering species was purchased by Dr. White in 1976 from a company that had imported the plant from Peru, unfortunately without collection data. The sharply three-angled peduncle places the species in Section *Alaticaula*. The medium-sized maroon flowers are of cardboard-like consistency and long-lasting. The lateral sepals, with the dorsal sepal, form a sepaline cup with a prominent mentum below and then fork into short, yellow tails.